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Entered as second class mail matter at the Postoffice at Medina, O. Published monthly.

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The A. I. Root Company, Publishers, Medina, Ohio

Editorial Staff:—Geo. S. Demuth and E. R. Root, Editors; H. H. Root, Assistant Editor; H. G. Rowe, Managing Editor.

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5-lb. pails, per carton of 100	6.25
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60-lb. square cans, per case of 1 can	.60
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Honey Markets

U. S. GOVERNMENT REPORT

Information from Producing Areas (first half of July.)

CALIFORNIA POINTS—Southern California—In San Diego County sumac, wild buckwheat and white sage promise a flow where plant sare not drying up. The surplus honey is darker than usual, with little water white honey reported. Extracting of alfalfa honey is going on in the Imperial Valley, with quality and color reported slightly better than average and a large quantity reported ready to ship. In Riverside and Los Angeles counties, white sage is still yielding in some districts, with buckwheat just coming on in the higher elevations. Wild buckwheat and sumac are providing a light flow in Orange county, where the sage flow was nearly a failure. Demand for honey is locally fairly good, but dealers are not interested in large lots except at lower prices than most beekeepers are willing to accept and considerable holding of honey is being done. With little demand from abroad and a quiet domestic market, dealers are not making much effort to purchase. The price trend continues downward. Beekeepers reported receiving for large lots as follows: Per lb., orange, water white, mostly 8c; extra white, 7½-7¾c; white, 7-7½c; extra light amber, 6½-7c; light amber, 6-6½c; sage, extra white, 7½c; white, 6½-7c; few, 7½c; extra light amber, 5¾-6¾c; light amber, 5-5¾c; mixed sage and buckwheat, extra light amber, 5½-5¾c; light amber mostly 5c; eucalyptus, light amber, 4½c; few higher, amber, 4c; light amber sage and tarweed, 6c. Beeswax is plentiful and lower, with sales reported at 18-22c per lb. Central California: Buyers are reported inactive. A few large lots old crop light amber alfalfa reported sold at 4½-5c; few, 5½c per lb.; amber alfalfa, 3½-4c; amber mixed flowers, 3½-4c; few, 4½c per lb.; white orange, 7½-8¼c; light amber eucalyptus, 4½-5½c per lb. Northern California: Bees are working on star thistle, with a light flow from alfalfa, but so far are barely making a living. No sales reported. No demand for beeswax, which is selling at 20c per lb. in trade.

PACIFIC NORTHWEST—West of Cascades: Fireweed is just starting to bloom and is yielding well, fully a week earlier than usual. A heavy flow continues from figwort. East of Cascades: Bees are starting on second crop alfalfa, with sweet clover also in bloom, and as the weather is favorable a good crop should be secured where these plants are plentiful. There is little danger now, it is said, from shortage of irrigation water. Few sales light amber alfalfa in small pails reported at 11-12c per lb. The market for beeswax is very dull, with few lots being sold for 20c per lb. in trade.

SOUTHWESTERN STATES—Southwestern Texas: The crop is decidedly spotted, with surplus reported to range from almost nothing to 100 lbs. per colony. Cotton is yielding well on black land and the mesquite flow is also good although hindered by the rainfall. Many colonies are weak and not building up satisfactorily. Few sales reported of extracted in small pails at 10-12c per lb.; bulk comb, small pails, 10-15c per lb. West Texas: A good flow from willow and mesquite is reported. Extracting is in progress and the honey is of unusually good quality. Sales reported of extracted in large lots at 8½c per lb. and of bulk comb at 11½c per lb.

PLAINS AREA—Red River Valley of North Dakota and Minnesota: In general this area has had good rains, prolonging the flow from white clover. Sweet clover is also blooming, and surplus is being stored in varying amounts according to the amount of time the bees can work. One scale hive reported averaging a gain of 8 pounds a day for 10 days. Beekeepers who have moved their colonies to sweet clover fields should do well. Basswood is just starting to bloom. Few sales reported. Ton lot white clover reported sold at 8½c per lb.; small pails, 10½c per lb. South Dakota and Iowa: The season continues to be erratic. The good flow from white clover which had been on for several weeks, with strong colonies showing a gain of 3 to 10 pounds a day, was cut short by extremely hot weather, and unless rain falls soon the flow from white clover will be about over. Sweet clover, however, should provide nectar for weeks to come. A few colonies reported melted down from the extreme heat. In scattered areas in Iowa, heavy rains have fallen and the clover flow there is still good. Reports of surplus to date range 50 to 150 lbs. Nectar is also coming in from basswood. Honey sales are reported slow and honey is moving about 1c per lb. less than it did a year ago. Few ton lots of white extracted have sold recently at 6c per lb., with 1 car lot reported moved at 7½c per lb. Comb honey is moving lightly at around $2.80-3.00 per case, with some reported offered low as $2.50 per case. Few sales beeswax at 24c per lb.; cash, 26c per lb. in trade for average run wax; 26c per lb. for light wax.

EAST CENTRAL AND NORTH CENTRAL STATES—Michigan, Wisconsin and Minnesota: Scattered rains have improved the situation somewhat, and although the crop will be short, and in some cases very short, the prospects are more favorable than they were a few weeks ago. Occasional scale hive reports show gains of 5 to 8 lbs. daily. The white clover flow has been prolonged by rains, but is now nearly over, with 50-lb. surplus the highest reported. In northern Michigan bees are storing honey rapidly from wild raspberry and milkweed. Occasional strong colonies have done well, but many colonies have still not built up satisfactorily. Goldenrod is beginning to bloom, and will darken the white honey unless that can be extracted soon. Very few sales reported. White extracted, 60s, 8½-9c per lb.; small pails, 13c per lb.; No. 1 white comb, wide range from $3.25 per case unwrapped to $4.90 for best wrapped; fancy, $5.25 per case. Car white clover reported offered at 7½c; car amber, 6½c per lb. Ohio, Indiana and Illinois: Rains have fallen recently, bringing on a flow from such clover plants as remained, but the dry weather in May and June, and the shortage of plants, are contributing to a generally poorer flow this season. The crop will be spotted and in many areas very short. Few sales extracted white in 60s at 9-10c per lb.; some sales amber extracted, 6c per lb. Wide range in price of comb honey, from $2.50 to $4.50 per case. Few sales beeswax, 30c per lb.

SUMMARY—The hot, dry weather has seriously affected the honey flow over much of the central and western territory. Although occasional areas in these states have received ample rainfall, in general it has been far short of normal. In consequence, unless rains come soon a crop below normal can be looked for in the mountain states, and over most of the clover belt. Nebraska, Kansas and northern Michigan seem to have better prospects than most of their neighboring states. Bumper crops are not looked for anywhere, except in occasional sections of the sweet clover belt. Weather conditions in most areas have been unfavorable for comb honey production. Basswood seems to be yielding more generously this year than usual. Milkweed and raspberry flows are above the average, but these plants are chiefly confined to northern Michigan. Hot weather and lack of rain have also been effective in cutting the crop in the South. The price trend appears downward in spite of the generally unfavorable prospects, and selling prices have in many cases been lowered a cent or more per lb. in an attempt to dispose of the surplus 1929 honey. Beeswax continues to weaken with the light demand, and the market has fallen off still further. Export demand for honey has not strengthened, and honey shippers do not seem optimistic over early improvement in this direction.

NORTHEASTERN STATES—New York and Pennsylvania: Frequent rains and moderate temperatures have prevailed over most of this area during the past few weeks. Crop reports are very irregular, with bees in some locations doing the best in several years, while other locations nearby have not provided any surplus at all. Basswood is in full bloom and generally yielding unusually freely. So far, the crop seems to be better than anticipated earlier, due to the rains. Prospects for a flow from buckwheat are fair to good. Very few sales of honey reported. Good beeswax reported sold at 30c per lb.

SOUTH ATLANTIC STATES—Eastern Maryland: Honey is coming in slowly from white sweet clover. Severe drouth killed many honey plants this spring. Few sales of comb honey reported at $5.00 per case.

From Producers' Associations.

Very recent reports from producers in Colorado indicate prospects of a very light honey crop, in fact, some feeding has been done as late as July 1. Prospects are for a fair crop in Wyoming and Montana. Carload shipments of last season's extracted honey have recently gone forward; new crop not sufficiently advanced to justify quoting at this date (July 18).—The Colorado Honey Producers' Assn., F. Rauchfuss, Mgr. Denver, July 19.

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Monthly Report of Honey Producers

Early in July we sent the following questions to honey producers: 1. What is the average yield per colony to date this season in your locality of (a) extracted honey? (b) comb honey? 2. How does this compare with the average yield for your locality? Give answer in per cent. 3. What portion of the entire crop of surplus honey does this represent, in your estimation? Give answer in per cent? 4. At what price has honey been sold, or contracted for, if any, in large lots (carload or less) in your locality during the past month for (a) extracted honey, per lb.? (b) comb honey, fancy and No. 1, per case? 5. What are prices when sold to grocers in case lots of (a) extracted honey in 5-lb. pails, or other retail packages in terms of 5-lb. pails? (b) comb honey, fancy and No. 1, per case? 6. What is the retail price to consumers in your locality of (a) extracted honey in 5-lb. pails, or other retail packages in terms of 5-lb. pails? (b) comb honey, fancy and No. 1, per section? 7. How is honey now moving on the market in your locality? Give answer in one word, as slow, fair or rapid. The answers are tabulated as follows:

	Av. yield per col.		Pct. av.	Pct. total	Large lots.		To grocers.		Retail.		Movement.
	Ex.	Comb.	yield.	crop.	Ex.	Comb.	Ex.	Comb.	Ex.	Comb.	
Ark. (Jas. Johnson)	0	30	50	50			$.80	$4.80	$1.00	$.25	Slow
Ark. (J. V. Ormond)	30	20	50								Fair
Calif. (L. L. Andrews)	60	0		80	.07½		.75		1.00	.25	Slow
Colo. (O. E. Adcock)	0	0	50	0			.50		.57½		Slow
Colo. (J. A. Green)	5		10	10			.60		.80	.12	Slow
Conn. (A. Latham)	0	0					1.00	6.50	1.30	.37	Fair
Fla. (H. Hewitt)	50		80	90			.60		.80		Slow
Ga. (J. J. Wilder)	37	21	33⅓		.09	3.50	.65		1.00	.20	Fair
Ill. (A. L. Kildow)	25	25	50	50			.75	4.80			
Ind. (T. C. Johnson)	50	30	75	90			.80	4.00	1.00	.25	Slow
Ind. (E. S. Miller)	50	25	80				.80	4.80	1.00	.25	Slow
Ind. (Jay Smith)	40		100	90			.75	4.50	1.00	.30	Slow
Iowa. (E. G. Brown)	75		40	40			.65	3.00			Slow
Iowa. (F. Coverdale)	70	40	100	90			.55	4.00	.75	.18	Slow
Iowa. (W. S. Pangburn)									.55		Slow
Ky. (P. C. Ward)	0	0					.90		1.15		Slow
Me. (O. B. Griffin)	0	0	25								Slow
Md. (S. G. Crocker)	30	20	50	100			1.00	5.00	1.50	.35	Slow
Mich. (I. D. Bartlett)	75		100	50			.60		.75	.25	Fair
Mich. (F. Markham)	50		50	100			.80	4.00	1.00	.25	Slow
Mich. (E. D. Townsend)	30		50	50	.09						Fair
Minn. (F. W. Ray)	60		90	75	.08		.60		.75		Slow
Mo. (J. H. Fisbeck)	40		60	90			.80		1.00		Slow
Nebr. (J. H. Wagner)	100	50	100	50	.08½	3.60	.65	4.37½	.75	.20	Slow
N. Y. (F. W. Lesser)	50	30	100	80							Slow
N. C. (C. S. Baumgarner)	0	0		0			1.00		1.25	.35	Fair
N. C. (W. J. Martin)	150	100	100	100	.08½	3.50	1.00	4.50	1.25	.35	Fair
N. C. (C. L. Sams)	70	50	100	90	.11	3.50	1.00	4.50	1.25	.30	Fair
N. D. (Chas. Engle)	40		25	25			.60	4.75	.75	.25	Slow
Ohio (R. D. Hiatt)	50	25	40				.75	4.80	1.00	.25	Fair
Ohio. (F. Leininger)	25	0	15	100	.08½						Slow
Ohio. (J. F. Moore)	50	50	75	75			.75	4.00	1.00	.25	Slow
Ore. (H. A. Scullen)	60		100	85			.60		.75	.22	Slow
Pa. (H. Beaver)	10	0	20	25					.70		Slow
Pa. (D. C. Gilham)	40	30	100	75			1.00	6.30	1.35	.35	Slow
S. C. (E. S. Prevost)		35		50					1.00	.30	
Texas. (T. A. Bowden)	40		75	50			.55		.75		Fair
Texas (H. B. Parks)	10		20	70			.65		.75		Slow
Utah. (M. A. Gill)	0	0	0						.50	.20	Fair
Va. (T. C. Asher)	25	20	33	100			.84	4.80	1.00	.25	Fair
Wash. (W. L. Cox)											Fair
W. Va. (W. C. Griffith)	10	0	25				.70	4.80	.90	.30	Slow
W. Va. (T. K. Massie)	0	5	10	5						.30	Slow
Wis. (N. E. France)									.75	.20	

"Standard" Equipment

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Combination 3-frame and Cappings Extractor - - - $14.50

Best Extractor Value Ever Offered

Faster than two-frame reversible and also dries the cappings. Latest improved and most efficient and fastest small extractor made.

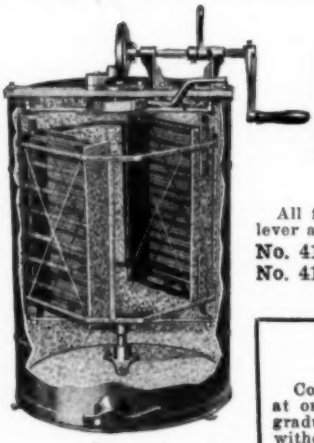
Extracts all the honey from three standard frames at one time at rate of 60 per hour. Ball bearing reel; turns so easily can be operated with thumb and finger.

Also designed to extract the honey from the cappings. Just loosen the two wing nuts and entire top lifts off leaving basket reel entirely clear and open to pour in cappings. Reel is lifted out of tank to dump out dried cappings.

You will be pleased by the easy and efficient way it does its work.

Combination 3-frame and Cappings Extractor, wt. 38 lbs., $14.50.

Superior Reversible Extractors, $24.00



Patented.

Two-Frame Reversibles

Rigid locked construction comb pockets swing to extract both sides of combs without touching them. Heavy leather lined brake; ball-bearing reel nicely balanced and smooth running. Semi-steel gears and automatic handle release. Truly "The Best on the Market."

No. 15—9⅝ x 16 Pockets, Wt. 90 lbs., Price, $24.00
No. 17—12 x 16 Pockets, Wt. 110 lbs., Price, 29.25

Four-Frame Automatic Reversibles

All four comb pockets reverse by a light pressure on the brake lever and without even stopping the reel.

No. 415— 9⅝ x 16 Pockets Wt. 215 lbs. Price, $50.00
No. 417—12 x 16 Pockets Wt. 260 lbs. Price, 65.00

Write for prices on Friction Power Drive.

New 24-Frame Superior Radial

Completely extracts 24 standard frames or 12 Jumbo frames at one loading. Friction Drive makes reel start off slowly and gradually picks up speed desired to completely extract frames without touching them. You do other work while machine is extracting.

Large size Heavy Duty Cappings Baskets may be had for extracting the cappings. They simply are hooked onto the reel. Baskets are lifted off to dump out dried cappings. The easiest and best way to handle them. Write for full particulars.

24-Frame Radial, Wt. 290 lbs.....Price, $76.50
Heavy Duty Cappings Basket, per pair...Price, 5.00

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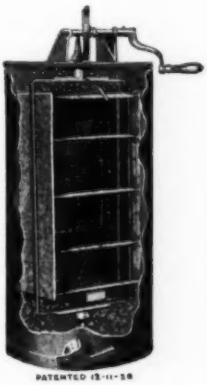

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A very low priced extractor for the beginner and small beekeeper. Ball-bearing reel operates easily and efficiently, removes most of the available honey. Fine for extracting unfinished comb sections. The frames are not touched until both sides are finished—just turn in one direction for extracting one side, and in opposite direction for extracting the other.

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Made of high grade carbon tool steel. Comfort thumb rest handles.

8½"	Wt. 1½ lbs.	$1.25
10½"	Wt. 2 lbs.	1.35
10½" Steam Heated	Wt. 2 lbs.	4.50
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Steel Hive Tools

The best tool for prying hives open, prying frames apart and scraping off surplus wax.

8" length	Wt. 4 ozs.	$0.45
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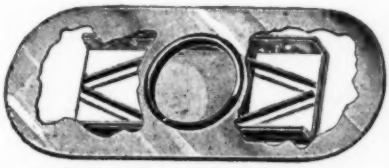
4 x 7 Tin	Wt. 2¼ lbs.	1.15



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Weight, 2 ozs. Price, 13c each, or 10 for $1.25.

Ask Your Dealer

If he can not supply Standard Equipment, write us for prompt shipment.

THE STANDARD CHURN CO., Wapakoneta, Ohio

Everything Sold on Money-Back Guarantee of Satisfaction.

TO SELL YOU

PUT IT UP IN THE HANDSOMEST

Handsome Honey Containers

Our New Lithographed Honey Pail

A Beautiful Honey Pail

Lithographed in gold, green, red and black, and name and address printed in black. It is the handsomest lithographed pail made. Lacquer finish on inside. Seams soldered, making absolute safety in shipping. Write for prices and illustration in color.

Our 5-lb. plain p with No. 108B label.

Plain Tin Containers

The picture to the right shows a plain-tin 5-lb. pail decorated with our four-color No. 108B label. Very handsome. Nothing better for honey to be sold to local trade. Here are the prices:

	No. in carton.	Ship. wt.	Price.	No. in. carton	Price.
2½-lb. can, 4x4 9/16	100	35	$3.75	24	$1.00
5-lb. pail, 5x5¾	50	29	3.20	12	.90
10-lb. pail, 6¼x7⅛	30	29	2.90	6	.70

60-lb. sq. cans, 2 in case, ship. wt. 17 lbs., $1.00 per case; 10 to 49 cases, 96c case; 50 cases or over, 92c a case.

Handsome Glassware

Clear, tall glass jars, very handsome. Put one of our beautiful labels on this glass, and you have a perfect package for selling your honey. Fitted with the popular quarter-turn screw caps—easy to put on and secure when on. Here are the prices:

	Ship. wt.	1 case	6 cases
8-oz. round or paneled jar, 24 in case	12	$0.85	$5.00
16-oz. round or paneled jar, 24 in case	19	1.10	6.45
32-oz. round jar, 12 in case	15	.80	4.68
48-oz. round jar, 12 in case	18	.80	4.74
6½-oz. white glass tumblers, 48 in case	20	1.40	8.28

Regular Carton.

Beautiful Cartons for Comb Honey

The day is here when comb honey must be wrapped to sell well. Grocers demand this. Our window carton with cellophane-covered opening in the front is a beauty. Our regular comb-honey carton is very tastefully decorated in yellow and green.

	100	500
Regular Cartons	$0.90	$3.75
Window Cartons	1.45	6.95

Both styles are made for section sizes 4¼ x1⅞, 4¼x1½ and 4x5x1⅞. We can supply also regular cartons in several special sizes.

For printing name and address on cartons add for 100, $1.50; 500, $2.25; 1000, $3.

All-cellophane comb-honey wrappers make a wonderfully fine market package. For square or 4x5 sections, 80c per 100, $7.00 per 1000.

Window Carton.

SEND FOR OUR HONEY CONTAINER CIRCULAR.

THE A. I. ROOT COMPANY ❖ ❖ ❖ MEDINA, OH

HONEY RIGHT

ASS, OR CARTONS YOU CAN FIND

Artistic Honey Labels

Nothing is more important in your honey selling than attractiveness in the label you place on your glass or tin packages—and this is true whether you sell at the roadside market or to your local grocer. Select your glass and tin packages with care, then put on them the most attractive labels to be found. We have them, and want to send you our new label catalog that shows them.

Here Are Ten of the Fifty Different Sizes and Designs of Root's Multi-Colored Honey Labels.

Root Labels, in handsome colors and designs, are tremendous selling helps. This year we have four beautiful new designs to offer you. **Send for our new honey label catalog.**

THE A. I. ROOT COMPANY ◆ ◆ ◆ MEDINA, OHIO

HONEY CONTAINERS

Friction Top Pails

F. O. B. Cars Lansing.

	24	50	100	200	500	1000
2½-lb. Cans:	$1.10	$2.00	$3.80	$7.50	$17.75	$34.50
5-lb. Pails:	1.85	3.30	6.50	12.75	30.75	59.50
10-lb. Pails:	2.50	4.85	9.50	18.50	45.50	88.00

F. O. B. Cars Chicago.

	100	200	500	1000
2½-lb. Cans	$3.25	$ 6.50	$15.75	$31.00
5-lb. Pails	5.70	11.40	27.40	53.50
10-lb. Pails	8.00	15.75	39.25	76.75

Pails by Parcel Post.

	1 doz.	2 doz.	4 doz.
2½-lb. Cans	$0.70	$1.30	$2.50
5-lb. Pails	1.10	2.20	4.25
10-lb. Pails	1.55	3.05	6.00

Postpaid to points within 150 miles of Lansing.

Five Gallon Cans

F. O. B. Cars Lansing.

Packed in Reshipping Cases, 2 Cans to the Case.

Per Case	$1.10
10 Cases	10.00
50 Cases	48.50

F. O. B. Cars Factory (Detroit, Chicago or Warwood, West Virginia.)

10 Cases	$ 9.00
25 Cases	22.00
50 Cases	43.25
100 Cases	85.00

Add 1½c per case for 2½" Screw Caps.

60-Pound Cans in Bulk

Per Can	$0.40
6 Cans	2.30
12 Cans	4.50
50 Cans	17.50
100 Cans	34.00
Per Crate 50	15.00

F. O. B. Chicago or Warwood, W. Va.

Tall Clear Glassware

F. O. B. Cars Lansing

No. in Case.	Shipping Wt.	Per Case	10 Cases	25 Cases	50 Cases
3-oz. Jars:					
48	12 lbs.	$1.25	$11.50	$27.00	$52.00
5-oz. Jars:					
24	10 lbs.	.80	7.50	17.50	34.00
8-oz. Jars:					
24	12 lbs.	.95	8.75	21.00	40.00
16-oz. Jars:					
24	19 lbs.	1.15	11.00	26.00	49.75
32-oz. Jars:					
12	15 lbs.	.85	8.25	19.25	37.75

Corrugated Paper Shipping Cases

F. O. B. Cars Lansing
Holding 24 Sections Each

	5	10	50	100
Corrugated Shipping Cases, 4¼x1⅞:	$1.10	$2.00	$9.25	$17.75
Corrugated Shipping Cases, 4¼x1½:	1.05	1.90	8.75	17.00
Corrugated Shipping Cases, 4x5x1⅜:	1.00	1.85	8.50	16.00

Holding 12 Sections Each

Offered only for 1⅞" sections and 4 x 5 sections, and same price for both sizes as follows:

5 for $ .60 10 for $1.10
50 for 4.75 100 for 9.25
200 for $18.00

F. O. B. Cars, Lansing, Mich.

This includes gummed tape for both top and bottom of case. Sample of the 12-section case, either size, for 18c postpaid.

Silicate of Soda for sealing above cases, 1 gallon, 60 cents; 1 quart, 20 cents; ½ gallon, 35 cents.

Gummed Tape, 3 inches wide, shipping weight 5 lbs, per roll, $0.85.

"A" Grade Tin Paste

The "A" grade tin paste we are selling this year is of much higher quality than we have had before. It is suitable for either tin or glass containers. 1 pint, 30 cents; 1 quart, 55 cents; 1 gallon, $1.75. Postage extra.

HONEY LABEL CATALOG—Fine honey and a Handsome Label make a combination that the average honey users can not resist. You produce the honey; let us produce the label for you. Then display your goods and see how quickly your honey moves. Send for Honey Label Catalog.

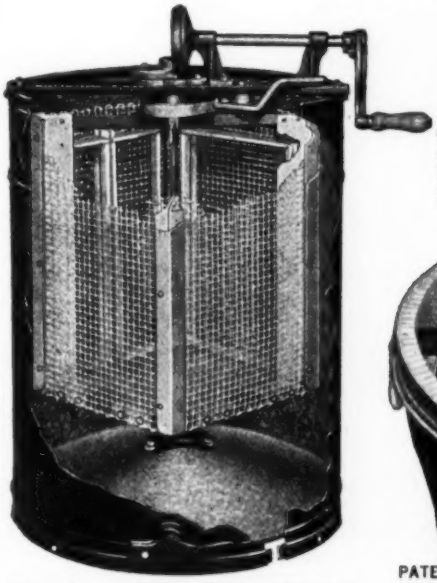
M. H. Hunt & Son, Lansing, Michigan

4-8 Universal Honey Extractor

Price $29.50. Weight crated, 130 lbs.

QUALITY---CAPACITY---PRICE---

You extract 4 deep or 8 shallow frames at a turning.

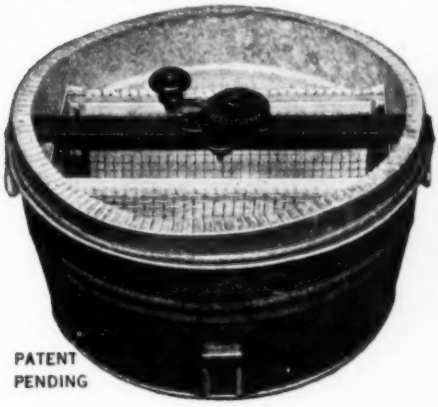


Send for special honey extractor circular.

Junior Honey Extractor

Price, $7.50. Weight, 30 pounds.

The **JUNIOR** extracts 2 shallow or 2 deep frames or 16 partly finished sections at a time and can be used for drying cappings. It is strong and well made and does a very efficient job.



PATENT PENDING

Tin Cans and Pails

BEST QUALITY ON THE MARKET—JULY 1, 1930.

In strong dust-proof cartons. Pails with Sure-on Bails.

	Shipment from Grand Rapids.			Shipment from Chicago or Wheeling, W. Va.		
	Per 100	Per 500	Per 1000	Per 100	Per 500	Per 1000
2½-lb. cans, 100 in carton	$3.75	$17.75	$34.00	$3.25	$15.75	$30.80
5-lb. pails, 50 in carton	6.50	31.00	60.00	5.75	27.50	53.75
10-lb. pails, 50 in carton	9.50	45.00	88.00	8.00	39.25	76.75

60-pound cans.	From Grand Rapids. One box.	Ten boxes.	From Chicago or Wheeling, W.Va. Ten boxes.	50 boxes.	100 boxes.
2 in wood box	$1.10	$10.00	$9.00	$43.50	$85.00
50 bulk crate	Per crate, $17.50		Per crate, $15.00		

PRICES ON CLEAR GLASS JARS

Panel or plain, in cartons. No. in pkgs.	Shipment from Grand Rapids, Mich., or Dunkirk, Ind. 1 carton.	10 cartons.	25 cartons.	50 cartons.
½-lb. 2 doz.	$0.95	$8.75	$21.25	$40.00
1-lb. 2 doz.	1.15	11.00	26.25	50.00
2-lb. 1 doz.	.85	8.00	18.75	37.50

A. G. WOODMAN COMPANY, Grand Rapids, Mich.

A Booster for Honey Sales

The E. Z. Carry Quart Jar

THIS year, of all years, it behooves the beekeeper to do all he can to promote his honey sales, to use every effort which will reflect in the sale of his honey at the greatest remunerative profit to himseelf.

Right now, we have a timid public that must be shown the value before it will buy. But every customer recognizes certain factors which make for the desire to buy. Some of these are:

Appeal to the eye
Appeal to the appetite
Quality product
Convenience
Re-use value of container

The **E. Z. CARRY** jar combines all of these in an especially efficient manner. A clear glass jar, beautifully colored honey, and an attractive label make an instant appeal.

The sweetness of honey—its historic associations, involuntarily attract. A good honey, cleanly and carefully packed is a real quality article.

The jar itself is convenient, easily carried home from the grocery or roadside stand, and can be used over for canning, preserving, pickling.

Dandy for carrying liquids such as milk, etc., on picnics. Even a child can be trusted to bring a jar of peaches from the cellar if packed in an **E. Z. CARRY**.

E. Z. Carry Jar

REMEMBER that we carry also a full line of all sorts of packages for honey—plain tin pails—fluted glass jars with screw caps—lithographed pails—and packages for sending honey by mail. Also five gallon cans in any quantity. -:- For comb honey we have the individual Revelation wrappers (the dust-proof package) and the comb honey carton. And in cases you have your choice of corrugated shipping cases or either two tier or single tier glass front cases. -:- And you need selling helps in the shape of labels and paste, outdoor honey signs, stickers, folders, recipe booklets, net weight stamps. In fact everything you will need to help the sale of your crop.

MORE and more the purchaser of foods is coming to want to see the product he buys. And more and more the purchase is made and the article carried away on the spot.

Here is where the **E. Z. CARRY jar comes in.** Just the thing for the roadside stand. One customer has already ordered ten gross for this very purpose.

And it is just as good for the grocery sale, because it is equally convenient.

So whether you sell at home, through the roadside stand or through your grocer—this **E. Z. CARRY** jar with the convenient handle should help you boost your home honey sales—to get nearer the worth of your clear high grade honey.

Say what we will, the economical way to sell honey is in fairly good sized lots. This quart jar will dispose of three pounds of honey every time you make a a sale.

And the price, fortunately, is attractive.

FULL quart measure—packed 12 in a corrugated shipping case—weight of case, 20 lbs.

PRICE 90c per case

F. O. B. Hamilton, Ill., or Keokuk, Ia.

Special prices on large quantities. Order your supply today.

Send for Fall Price List. It Will Be Sent by Return Mail

DADANT & SONS ❖ HAMILTON, ILL.

Gleanings in Bee Culture

August, 1930

Our Cornerstone

REMEMBER at all times that improved bee culture is our end and aim, and we trust no one will hesitate to give any facts from experience because they may tend to overthrow any particular person or "hobby." If any of our special plans don't work, or if anything we advertise has had its value overestimated, here in these pages is the place of all others to set the error right.—From A. I. Root's "Introductory" in the first issue of Gleanings in Bee Culture, Jan. 1, 1873.

Corn Sugar Interests Active The corn sugar pot is again boiling! On June 30 Congressman Ellis of Missouri introduced a bill in the House of Representatives (H. R. 13247) which would make it unnecessary to declare the presence of corn sugar when used to sweeten articles of food or beverages; and on July 19 the Secretary of Agriculture sent out a notice that a hearing would be held in his office on July 25 regarding the change in regulations in the Department of Agriculture, proposed by the corn sugar interests, that would make it unnecessary to declare the presence of corn sugar when used in other food products.

Those who have followed the shameful activities of these enemies of the Pure Food Law during the present Congress will note that there are now three bills pending by which these powerful interests propose to break down the Pure Food Law. (1) The Capper-Cole bill, introduced last year, would legalize the adulteration of many foods, including honey, with corn sugar or corn syrup. This bill, owing to the vigorous protests from beekeepers, has never been brought up for a hearing in committee, but could be called up any time during the 71st Congress. (2) The preservers' bill, on which the corn sugar people attempted to fasten their corn sugar clause, was reported out of the House Committee with the objectionable corn-sugar clause stricken out and a clause requiring the declaration of whatever the sweetening agent used inserted instead. However, by a legislative trick, the corn-sugar interests came very near accomplishing their purpose with this bill through a special ruling by which the requirement that whatever sweetening agent be used was stricken out, and an attempt was made to pass the bill in that form before Congress adjourned. The wording of the remainder of this bill is such that, with that portion stricken out, it would legalize the insertion of corn sugar in other foods without declaration. It was only the quick action on the part of beekeepers and others that prevented the passing of this bill in this form. It was at this crisis that Dr. Wiley again took a hand in the fight in spite of his illness, which effort on his part quickly resulted in his death. The bill is still pending, and may be brought up when Congress again convenes. (3) The Ellis bill is a straight-forward proposition to remove the requirement that corn sugar be declared when used to sweeten other foods. Strange to say, it appears to be innocent of the tricky, underhanded wording of all previous corn-sugar bills. This bill is in the hands of the Committee on Agriculture.

The greatest immediate danger is that the Secretary of Agriculture may yield to the constant hammering of the corn-sugar interests, and change the regulations in the enforcement of the Pure Food Law by making an exception in favor of corn sugar. The fact that the Secretary has called a hearing is an indication that he is considering such action.

Just as the last forms for this issue are being closed, the Editor is starting to Washington to testify against this proposed change in regulation. Before leaving he sent telegrams to influential beekeepers and others opposed to such a change hoping that many of them will also go to Washington to protest against such an outrageous proposition. If so, perhaps the Secretary of Agriculture will be convinced that the people of this country do not want a return of food adulteration.

Honey Plants Injured by Heat and Drouth The extreme heat in much of the country following a long period of drouth has wrought havoc with some of the honey plants. In some localities much of the white clover and alsike clover have been killed or badly damaged. In other localities they can still be revived by sufficient rain. The damage to the clovers is greatest in the southern part of the clover belt, the northern part having had much more rain. While in many localities conditions are discouraging so far as a honey crop next year is concerned, many things can happen to change the entire outlook before next summer. Often a honey crop has been secured from some unexpected source, just when there seemed no possibility of securing any surplus honey. Late rains may revive much of the clover and help other honey plants. It would, therefore, be unwise to neglect the bees because of present prospects. It is astonishing how quickly an apiary in the pink of condition can go to pieces when the owner becomes discouraged and neglects giving the colonies proper care. Where the honey crop has been cut extremely short by the heat and the drouth, the colonies should be left abundantly supplied with honey even though no surplus can be taken. Those who win in the long run are usually those who stick by their guns through periods of adversity as well as during periods of prosperity.

Replacing Inferior Queens Taking the country as a whole, there has been but little swarming this season. This means that an unusually large proportion of colonies will go into winter quarters with old or otherwise inferior queens, unless the beekeeper interferes by replacing such queens. The one redeeming feature connected with the troublesome problem of swarming is the large proportion of young queens at the close of the season, and in some cases the almost complete elimination of old queens throughout the apiary. During seasons of excessive swarming many beekeepers replace the old queens of all colonies preparing to swarm with young ones as a part of their swarm control procedure, and, of course, where swarms are permitted to issue, the parent colonies have young queens. As a result, colonies are in better condition for winter since they have more young bees for the winter cluster; and are in much better condition the following spring since these young queens are then in their prime for the extensive spring brood-rearing. During a season of almost no swarming, it is therefore more important than ever to replace all old or otherwise inferior queens. Replacing old or otherwise inferior queens with young ones of a good strain often proves to be the most profitable apiary work that one can do, and, if not already done, this work should be done this month so the young queens will have time to lay enough eggs to make a strong winter colony. In an article beginning on page 500 in this issue J. Norman Dyment gives a simple and effective method of requeening which should greatly encourage any who have hesitated to replace poor queens on account of the labor involved.

Division of Labor Among Bees The Editor spent three days in his apiaries just at the time that a short honey flow from basswood was closing and sweet clover was beginning to yield rapidly, which afforded an opportunity to note the difference in the way in which the bees work on these two great honey plants. On the first day, when the bees were working chiefly on basswood, the incoming bees were quite heavily laden with nectar, evidently carrying larger loads than they did later when working on sweet clover, but apparently only a part of the field force was needed to bring in all the available nectar. Usually during a good basswood honey flow there is a great rush of bees to the field early in the morning, which is kept up during the day if there is sufficient nectar, but when nectar becomes less plentiful, fewer bees take part in gathering. Quite in contrast, when sweet clover began to yield heavily, the hives seemed to be almost completely deserted of field workers except those coming in to unload their cargoes of nectar and again rush to the fields.

One wonders by what mysterious system the labor of the hive is divided, and what it is that sends only enough workers to the field to gather the available nectar while the remainder of the field force stays in the hive or remains quietly hanging on the outside. One can understand that less searching is necessary to obtain a load of nectar from basswood than from

sweet clover, and that less time would therefore be spent in the fields. Thus fewer workers may be needed to clean up all the nectar in the basswood blossoms. But what is it that determines how many and which ones of the field workers should carry nectar while others remain idle in the one case, and sends the entire field force to the fields in the other?

Missing a Honey Crop During good seasons when the honey flow is heavy and long, some surplus honey is usually secured even under the poorest management; but during a season like this has been in much of the country, thousands upon thousands of colonies have completely missed the honey crop. In some localities most of the colonies that were wintered in single stories, even though well supplied with honey last fall, either starved to death just before the beginning of the honey flow or were so reduced by near starvation that they were not able to store any surplus. In the same localities, colonies with a food-chamber well filled last summer were able to fill one or more supers. Thus, in the same neighborhood the season was a failure for some, and at least moderately prosperous for others because of the difference in management.

While it seems reasonable to leave only enough honey to carry the bees over until early spring, then feed if the bees are not able to obtain sufficient nectar from the field from early sources, the vast majority of beekeepers either fail to feed at the right time or do not feed enough. During a spring like the one just past it is quite natural to postpone feeding from day to day, thinking that surely the next day would bring better weather so the bees could replenish their dwindling stores from the fields. Many a honey crop has been lost by just such reasoning. Even the more alert who begin feeding on time, often are not able to do a thorough job in an emergency so that many colonies shut down on brood-rearing just at the critical time, and therefore are not in condition for the honey flow when it comes. Those who obtained a fair honey crop this season from white clover and alsike clover almost without exception are those who supplied each colony with a second story well filled with honey last summer in order to insure sufficient food for fall, winter, and spring.

Western Conditions in the East Many beekeepers in the East have had a real sample of what beekeeping in the West is like, this season, especially those located where there is considerable sweet clover. Just when many had given up hope of securing surplus honey, sweet clover began pouring out nectar with a rapidity not often seen east of the Mississippi River. Hot days with brilliant sunshine and cool nights, characteristic of summer weather conditions on the Great Plains, gave to the East regular western weather during the first half of July, and sweet clover responded in nectar secretion much as it does under normal western conditions. To many beekeepers east of the Mississippi River, it was a new experience to have a honey flow when the meadows and roadsides were brown from drouth. But sweet clover apparently thrives in spite of dry weather and seems to pour out nectar most freely when days are hot and nights are cool.

The most striking feature connected with this transfer of western weather conditions to the East was the almost total lack of swarming. There was practically no swarming even in colonies operated for comb honey and badly crowded for super room. In the Editor's apiaries, a few colonies started queen cells in preparation for swarming just before sweet clover began to yield, but gave it up when the queen cells were destroyed. Some of the colonies might have given it up without destroying the queen cells. The colonies were abundantly strong, having so many bees that it was difficult for them to get into the hives during the night, but early in the morning they left for the fields and during the day there were surprisingly few bees in the hives. Since the nights were cool and most of the bees were in the field from early morning until it was almost too dark for them to find their way home, it is not at all surprising that the colonies had no desire to swarm. This is quite in contrast with conditions east of the Mississippi River last year when frequent rains, together with somewhat erratic nectar secretion in white clover caused the field bees to stay in the hive at frequent intervals when the weather was hot. No wonder western beekeepers can operate for comb honey on such a large scale when their normal weather conditions are such that swarming is not nearly so troublesome as it is in the East.

Stock Selection and Requeening

J. Norman Dyment

A Highly Profitable Procedure That Can be Carried Out This Month

While the most efficient practice of stock selection and requeening in existence will not insure the success in beekeeping if other matters of importance are neglected, I believe that it is the most fundamental work of the apiary.

Before dealing with the principles of our method, I wish to say that, of all the fascinating work in our business, we have received the greatest pleasure from this source; and, when one considers that the queen is the soul of the colony, it is quite obvious why this is so.

Selecting a Breeding Queen

The first thing to do is to ascertain which is the best queen to breed from—a task much bigger than one might think. Anyone can pick out the finest looking one in a number, but why so many people base so much judgment on appearance is more than I know. We find that it takes at least two seasons to determine the honey-gathering merits of any queen's bees, and when we learn that any particular colony has excelled for two consecutive years under conditions equal with the rest of the colonies, we naturally observe the queen's appearance very closely. Sometimes she is a beautiful one and sometimes she is not a likely looking one at all, but it makes not one bit of difference as long as she is the most profitable mother.

Prolificness is a desirable characteristic if it does not exist at the expense of some other desirable qualities. We have had queens that simply didn't know enough to stop laying, and yet they weren't satisfactory enough to even contest for breeding. When one makes a fair test of the heaviest producers, why consider prolificness at all? Any colony which has made a record production will be strong enough for successful wintering.

Swarming and Bad Temper Reduced by Selection

A colony which shows an excessive desire to swarm should be disqualified at once, no matter how remarkable some other features may be. Last season we made a final proof that the tendency to swarm is quite hereditary, and when a colony takes a notion to swarm, honey gathering seems to be a matter of secondary importance.

Most apiarists know that the question of temperament can be decided in a hurry — sometimes, and in view of the fact that two or three tractable colonies can be handled in the same time that one would be struggling with one irascible colony, we cull the latter out in every case, despite any other excellent qualities which it might possess.

Wherein Color Is Important

The observation of color would be of less importance were it not that dark blood generally indicates an excitable temperament. We are very partial to uniform markings, however, believing that the daughters and granddaughters will average up better when color is uniform than in those lacking in uniformity. The progeny of our best breeding queen, I am quite sure, is not absolutely pure Italian, notwithstanding the three bands which would indicate such.

Longevity and hardiness are two characteristics which contribute most highly to a successful crop. Proof of this will be found by noting that the breeder producing the most satisfactory daughters will, as a rule, survive her competitive sisters.

When one bases his decision upon a fair test of two or more seasons of honey-gathering merit, he automatically includes ambition, possibly tongue length, and all the other characteristics which are most desirable; so why spend much time worrying about them, except for bad color, markings and temperament which can be discerned and eliminated any time.

I am not opposing the theoretical rules which teach us what to look for in a single examination of the hive. I am endeavoring to point out that, inasmuch as production is the direct criterion of success, a thorough test from this standpoint is the only way to avoid the exception to the rule, and to prove to what degree the merit exists.

After we have selected beyond question four or five of the best mothers from seven or eight hundred, we still have a further test to make. This time we raise a given number of daughters from each queen chosen, to prove the final superiority of production. Thus efficient and effective stock selection requires time and

patience. Our breeders generally reach the age of three years before we can arrive at a final conclusion of their true merit, but this is not old for breeders, as their lives can be prolonged by special care.

Method of Requeening

Now that we have a couple of very precious breeding queens located, we are ready for requeening operations. While there is some controversy as to what method is best to follow, I will explain our present system which we will continue to employ until we find a better plan.

If one desires to go about it in the most inefficient manner possible he can just keep dilly-dallying with a hive here and there and now and again. In all operations of the apiary we find it most economical to be systematic, and as near as possible to treat the yard as the unit rather than the individual hive.

Some apiarists are much too tenderhearted to kill a queen when she is doing good work, but we have no guarantee that she will not fail the following season and deprive us of a satisfactory crop. We have no time to discern the particular day when every individual queen begins to fail, and to be there Johnny-on-the-spot with a successor. So, we make a rigid rule to requeen half our number yearly, therefore no queen save those being tested for breeders ever serves more than two seasons.

Best Time for Requeening

During the forepart of August, which is near the close of the honey flow with us, we make a wholesale slaughter of all the royalty in the yards which we intend to requeen, and arrange to have the queen cells ripe enough to introduce in about eight days' time. The reason for the interval is that we can destroy each colony's own queen cells and insure the selected stock, as well as prevent any swarming. We have proved to our own satisfaction that it is no disadvantage to have the colonies queenless for a period at this time of year, since the bees which would be reared would only be boarders and they would be the older ones for winter.

We have tried other methods such as introducing a ripe cell when killing the queen, and also two or three days later; but, while they seldom seem to destroy the cell, they evidently either disregard the virgin when she emerges, in favor of rearing one of their own, or they cast a little swarm with her.

Plans Made in Advance

It requires some good planning to begin with the cell-building colony—dequeen it, feed it for two or three days before giving the cell cups containing the transferred larvae, and to have those cells mature just eight days after killing the queens in the yard to be dealt with. But if one makes a practice of not transferring larvae over two days old and does this two days before dequeening the colonies which they are for, he is quite safe in having a queenless period of eight days before the young queens will emerge, and they can better be a little late than early.

Extra Queens in Nuclei Take Care of Failures

Failures prove to be about ten per cent and we take care of this by making that number of nuclei extra for each yard at the time of introducing our selected cells. These can be united with the colony when the failures are detected.

Some years ago when we were under the erroneous impression that artificial queen rearing was an undertaking much too complex for the average beekeeper, any kind of a young queen was appreciated, but now such a one would fall considerably below the average of our selected stock.

Labor Required Is a Small Item

Two men will kill the queens in a yard of sixty or seventy in a half day, and eight days hence it requires an afternoon to destroy their cells and introduce the selected ones. Later, it takes another half day to detect the failures and unite with them the nuclei prepared for that purpose, but this visit can not be counted as it is indispensible in any case to give the colonies the "once-over" before packing. So with a little time allowed for raising the cells, it amounts to a small day and one-half per yard. Doubtless no more profitable time could be spent in the apiary.

I could enumerate some reliable comparative figures showing the advantages of such requeening, but I do not wish my writing to appear incredible. It is enough to say that if we were deprived of the opportunity of stock selection and requeening, we would, from a financial point of view, feel that we had lost a privilege which contributes in a high degree to the success of our beekeeping.

Smithville, Ontario, Canada.

Sterilizing Diseased Combs

C. E. Burnside

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Growth of *Bacillus Larvae* Inhibited by Formaldehyde in Treated Brood Remains

In the bacteriological examination of foul brood scales after treatment with formaldehyde the usual procedure has been, as described by Sturtevant *(2)**, to allow the combs to air out until no odor of formaldehyde can be detected. If the immersion treatment is used, as much of the disinfectant as possible is first thrown out with a honey extractor. Brood remains are then transferred directly to culture tubes and, after sufficient water has been absorbed to soften them, they are spread over the surface of the culture medium. Sturtevant *(2)* washed combs that he had treated with 20 per cent formalin solution immediately after the disinfectant had been extracted in order to remove the odor and prevent the formation of paraformaldehyde in the combs. In cultural tests he obtained better growth of *B. larvae* from washed combs than from unwashed ones. The only conclusion which he drew from these results seems to be that sterilization continues in treated combs while they are drying after most of the disinfectant has been extracted. Jones *(1)* shook and washed the formaldehyde solution from treated combs and prepared cultures without waiting for the brood remains to dry, and Wakefield *(3)* prepared cultures from foul brood material that he had treated with formaldehyde gas in fruit jars, without either washing it or allowing it to dry. The method of washing combs employed by Jones is incompletely described by him, but it seems to have consisted only in rinsing the combs with water after most of the disinfectant had been shaken from them. Chemical tests have not been employed in the past to determine if the disinfectant had all evaporated, and the absence of a noticeable odor of formaldehyde was the criterion used.

Formaldehyde Does Not All Evaporate from Treated Combs

In experiments conducted by the writer on the sterilization of American foul brood combs, and in his bacteriological examination of treated combs submitted by beekeepers, the presence or absence of formaldehyde has been determined by chemical analysis. It has been found by these tests that formaldehyde does not all evaporate from treated combs when they are allowed to dry, but that it remains in them indefinitely. Positive chemical reactions for formaldehyde have been obtained repeatedly from treated brood remains when it has no longer been possible to detect the odor of the disinfectant. Tests have shown distinctly the presence of formaldehyde in brood remains and in honey and pollen from treated combs after these had been allowed to remain at ordinary room temperature for more than a year. Likewise, formaldehyde is not all removed from brood remains by rinsing the treated combs with water. It has been found necessary to soak the treated combs for several hours, changing the water at least once, in order to allow practically all of the formaldehyde to dissolve and diffuse from the dead brood. It is decidedly unsafe, therefore, to depend upon the sense of smell for detecting the presence of formaldehyde in treated combs.

The absence of a noticeable odor of formaldehyde in combs that have dried after treatment is readily explained. When a solution of formaldehyde evaporates at ordinary temperatures only a part of the formaldehyde passes off as a gas. The remainder is deposited as solid paraformaldehyde. Even when directly exposed to the atmosphere, paraformaldehyde evaporates with extreme slowness at ordinary temperatures and has only a very slight odor of formaldehyde. When paraformaldehyde is protected from direct contact with the atmosphere (a condition that exists to some extent within foul brood scales) evaporation is further reduced or it may not occur at all. Paraformaldehyde deposited in treated brood remains is, therefore, not readily detected by odor.

Effect of Formaldehyde Remaining in Combs

With the discovery that paraformaldehyde remains in foul brood scales after they are thoroughly dry, even when the odor can not be detected, the question naturally arose as to whether or not the growth of *Bacillus larvae* in culture is af-

*Reference is made by number (italic) to "Literature cited," page 505.

fected by it. Experiments, including more than a thousand cultures, have been conducted to determine this point. Some of these experiments and the results obtained are outlined in this paper. Other experiments, not described here, have been conducted which seem to eliminate the possibility that the observed phenomenon might be due to metabolic or disintegration products of *B. larvae*.

Six different series of cultures were prepared as described below, in order to determine the effect of paraformaldehyde upon growth of *B. larvae* in culture.

1. Scales that had been treated with formaldehyde gas and allowed to dry until no odor of formaldehyde could be detected were macerated together with untreated scales. This mixture was cultured in order to determine if sufficient paraformaldehyde remains in untreated scales after drying to affect the growth of *B. larvae* when an abundance of viable spores are present.

2. As a check upon the results obtained with the cultures described in No. 1, other cultures were similarly prepared except that the treated scales were thoroughly washed to remove the paraformaldehyde.

3. In order to determine if growth of *B. larvae* in culture is affected by paraformaldehyde in treated scales when sterilization is only partially complete, cultures were prepared with unwashed scales from combs that were treated with formaldehyde gas, formalin-water solution, and formalin-alcohol solution.

4. For comparison with the cultural results obtained with the cultures described in No. 3, other cultures were similarly prepared from the same treated combs, except that the scales were first washed to remove the paraformaldehyde.

5. An attempt was made to determine the effect of different amounts of paraformaldehyde on the growth of *B. larvae* in culture by adding different known quantities ranging from 0.1 to 4 mg. in water solution to cultures prepared with an entire untreated scale.

6. Check culture for the purpose of comparison with each series of cultures were prepared with untreated scales.

Scales were washed by soaking them in sterile water at 37° C. for a day or more. The water was changed at intervals until negative tests for formaldehyde were obtained. Yeast extract egg yolk nutrient agar, containing about 5 per cent carrot extract was used for the culture medium in the form of test tube slants containing from 5 to 10 c. c. of the medium. Cultures were incubated at 37° C. and examined microscopically for growth of *B. larvae* after different periods of time ranging from 3 to 15 days.

Growth Inhibited in Unwashed Scales

With the first series of cultures prepared with a mixture of treated and untreated scales, it was found that growth of *Bacillus larvae* is delayed or entirely prevented. The mixture of scales ranged continuously from one treated to one untreated up to one treated to nine untreated and inversely from one untreated to one treated up to one untreated to nine treated. In the check cultures prepared with untreated scales alone abundant growth of *B. larvae* always developed within three days. After the same period of incubation no growth of *B. larvae* had developed in cultures containing one or more treated scales mixed with untreated ones. After incubation for eight days good growth of *B. larvae* had developed in all cultures that contained but one treated scale and after fifteen days' growth had developed in cultures with two treated scales. No growth of *B. larvae* was obtained in any of these cultures that contained three or more treated scales.

In repetitions of this experiment similar results were obtained except that slight growth occurred in some of the cultures with three treated scales. On the other hand, in the second series of cultures with the proportions of treated and untreated scales described above, when the paraformaldehyde was washed from the treated scales, growth of *B. larvae* was not noticeably inhibited, regardless of the numbers of treated scales in the same cultures with untreated ones.

Remaining Formaldehyde Inhibits Growth When Sterilization Is Incomplete

These results indicate that sufficient paraformaldehyde may be present in treated foul brood scales to affect seriously or to inhibit entirely growth of *Bacillus larvae* in culture even when an abundance of viable spores are present. It seems likely, therefore, that growth of *B. larvae* in culture with treated foul brood scales in which sterilization is partially complete may be delayed or prevented by the paraformaldehyde present. This was found actually to be the case in the third and fourth series of cultures with scales treated with formaldehyde gas, formalin-water solution, and formalin-alcohol solution.

In the case of combs treated with formaldehyde gas good growth of *B. larvae*

has frequently been obtained after the scales were thoroughly washed, when no growth was obtained without washing. In the bacteriological examination of a comb treated with formaldehyde gas by a beekeeper, no growth was obtained in any of 25 cultures from open cells after incubation for seven days, whereas, after washing, growth of *B. larvae* was obtained in all of 25 cultures from open cells of the same comb, after incubation for the same period of time. In the examination of another comb treated with formaldehyde gas, 40 per cent of the unwashed scales from sealed cells gave growth after incubation for seven days, whereas growth of *B. larvae* was obtained from 100 per cent of the sealed cells after seven days when the scales had been washed before the cultures were prepared. Combs treated with formaldehyde gas at the Bee Culture Laboratory gave cultural results comparable with the results obtained in the examination of combs treated by beekeepers, in that growth was sometimes obtained after the scales had been washed, when no growth could be obtained without washing, regardless of the length of the period of incubation.

Bacteriological examination of foul brood scales treated with formalin-water and formalin-alcohol showed as great an increase in the amount of growth of *B. larvae* in culture after washing the scales, over that obtained with unwashed scales, as did the scales treated with formaldehyde gas.

In the examination of a comb treated with formalin-alcohol for 51 hours and allowed to dry for three weeks no growth was obtained with scales from either open or sealed cells after incubation for 14 days. By thoroughly washing scales from the same comb, growth was obtained after 10 days from 55 per cent of the open cells and from 92 per cent of the sealed cells. Similarly, a comb treated with 20 per cent formalin-water for 51 hours and tested without washing the scales appeared to be sterile in the open cells, as no growth was obtained after the cultures had been incubated for 11 days. Twenty-five per cent of the sealed cells from this comb gave growth in culture after 10 days without washing. After washing and incubation for 10 days, growth was obtained in culture from 100 per cent of both the open and the sealed cells.

Other comparative tests with combs treated with formalin-water and with formalin-alcohol gave similar results. After periods of immersion for 24 and 48 hours no growth was obtained from scales taken from open cells without washing but, after washing, 50 per cent to 100 per cent of them gave growth.* Growth of *B. larvae* was sometimes obtained from sealed cells without washing the treated scales, but the abundance of growth as well as the percentage of scales that gave growth was always increased by washing the scales before culturing. The incubation period required to obtain growth with washed scales was shorter than with unwashed ones but was longer than the period required with untreated scales.

Inhibits Growth in Culture

An attempt was made in a fifth series of cultures to determine the effect of different quantities of paraformaldehyde upon the growth of *Bacillus larvae* in culture. The effects of the different quantities used upon cultures prepared with an entire untreated scale were tentatively determined as follows: Growth is slightly inhibited by 0.3 to 0.5 mg. of paraformaldehyde per culture. From 0.6 to 1 mg. results in inhibition of growth for several days but fair to good growth finally develops. More than 1 or 1½ mgs. per tube completely inhibits growth of *B. larvae*. Quantitative analysis of formaldehyde in 240 treated scales after they had dried for more than two months at room temperature showed an average of approximately 0.3 mgs. While this amount seems to be sufficient to inhibit only for a time growth of *B. larvae* in culture when abundant viable spores are present, the results obtained in the bacteriological examination of treated combs indicate that a lesser quantity will inhibit or entirely prevent growth when the number of viable spores has been greatly reduced by the process of sterilization.

Delayed growth in cultures made with treated scales that had not been washed,

*Since this work was completed, H. G. Ahrens of the University of Minnesota has reported in the February, 1930, issue of the American Bee Journal, cultural studies on B. larvae with American foul brood scales that he treated with formalin solution in test tubes. In these experiments, Ahrens washed the treated scales when they were removed from the formalin solution and incubated the cultures for different periods of time ranging from 3 to 30 days. He reports results to show that a longer incubation period than three days is necessary with treated scales and that formalin solution is less efficient as a disinfectant for B. larvae than has hitherto been supposed. Mr. Ahrens' results were doubtlessly affected by the fact that the scales were washed after treatment, but he seems to have been unaware of this since he states that it is unnecessary to wash the scales from treated combs when the formalin is allowed to evaporate.

in excess of that observed in cultures made with treated scales that had been washed, can be explained, in part at least, by the gradual decrease in concentration on the surface of the agar. In freshly prepared cultures paraformaldehyde is most concentrated on the slant in direct contact with the spores of *B. larvae*. As diffusion through the agar occurs, concentration on the surface is reduced until finally a low degree of concentration is reached where growth is no longer inhibited. The transfer of treated foul brood material to fresh culture media after several days' incubation results in a reduction of the concentration of paraformaldehyde, and thus growth of *B. larvae* may be obtained in transfers when it did not occur in the original culture tubes.

While these observations are of a preliminary nature, certain facts have been determined which seem to be of importance in the treatment of American foul brood combs with formaldehyde and in their bacteriological examination for sterility. It has been demonstrated that considerable paraformaldehyde may be present in the scales lying in treated combs when its presence can not be detected by odor. When sterilization is incomplete, growth of *Bacillus larvae* in culture may be temporarily or permanently inhibited by paraformaldehyde deposited in the scales. It is also indicated that treatment by immersion for 48 hours in 20 per cent formalin-alcohol or formalin-water solution is insufficient to sterilize completely all American foul brood scales in either open or sealed cells. Recurrence of disease in the past in treated combs that had been reported as sterile upon bacteriological examination may possibly be explained by these observations.

On the other hand, many thousands of American foul brood combs have been used without recurrence of disease after immersion for 48 hours in formalin-water or formalin-alcohol solution. The explanation for this seems to be that the number of viable spores present has been insufficient to produce the disease, or that growth of the organism within the digestive tract of the brood of bees has been inhibited by the formaldehyde present as was found to be true in the case of cultures with treated scales. In recent unpublished work, A. P. Sturtevant has found that there is a minimum inoculum below which it is difficult or impossible to produce disease in a colony of bees.

As a result of these experiments, therefore, the following conclusion is drawn:

In culturing *Bacillus larvae* in order to determine the degree of sterilization in American foul brood combs that have been subjected to treatment with formaldehyde, it is necessary to wash the scales thoroughly before cultures are prepared.

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The Scent Theory

Allen Latham

Behavior Rather Than Odor May be Deciding Factor in Introducing Queens

It appears to be a very general belief that scent plays a large part in the tolerance of bees for strange bees and queens. To prove the theory is well nigh impossible and to disprove it is equally difficult. The best we can do is to approach the question indirectly and to submit it to the cruelty of bare logic.

In the first place we do not know that bees have a sense of smell as we do at all. In fact, no two persons can know that the same scent gives to them the same sensation. How can we know the sensations of another being? Surely if all scents are the same to all people then some women must be crazy to carry some of the perfumes we are forced to smell in public and any man who will deluge himself with musk is a —. I will not say what he is, but surely that odor can not be the same to him as it is to me.

How then can we know how scents react on bees? We can not, yet we do know that scents do react on bees for we can prove that by actual experiment. It is very easy, too, to believe that bees may be far more sensitive to slight odors than are we ourselves. Dogs are, and so why not bees? It is because we readily accept the possibility that bees may be far more sensitive to odors than we are ourselves that we are so prone to accept as fact the

theory that bees recognize each other by smell.

Guards Recognize Field Bees Having Various Odors

If this theory is indeed fact then the bee must have an extraordinary sense of smell. Just think for a moment what is happening every busy day in summer. Hundreds of bees are scurrying into the hive every minute. These hundreds of bees are coming from visits to scores of different blooms. Some of the blossoms visited possess very strong odors and the visiting bees assuredly are veritably bathed in this odor. Yet these hundreds of bees enter the hive with scarcely a challenge from the watchful guards. But let one bee of those hundreds be a sneaking thief from a neighboring hive and she is at once pounced upon and maltreated. Now all these bees are carrying a different odor than that of the colony, assuming for the time being that this colony possesses a colony odor. Why does one bee out of those hundreds carry an odor which is recognized at once as inimical to the welfare of the colony?

A little consideration will offer answers to the questions asked above, especially the last question. We can say that the bees with their acute sense of smell can instantly analyze the compound odor of each bee that enters and in the case of the thief the guards do not get the elemental odor recognized as their password. Let us accept this answer for the time being.

Source of Colony Odor

What gives a colony its colony odor? Is it the mother, or queen? Very well, when two colonies are united, what then is the colony odor? When a new queen is accepted, does the colony odor remain the same or does it become that of the queen? When new workers, daughters of the new queen appear, will they have the old odor of the colony or will they have their own odor? Do you see the maze of difficulties we are getting into by relying too strongly upon this scent theory?

The knowing ones tell us that a new queen is kept caged until she acquires the colony odor. How do they know but that the caging allows time for the colony to acquire the odor of the new queen? I once heard a man say that he kept the old queen and the new queen caged side by side so that the new queen could get the odor of the old queen. Some logic that!

A colony swarms and the swarm is hived close by. Three days later the swarm begins to rob out the old colony and there is much fighting. A rare occurrence, perhaps, but it has happened. Has the colony odor changed in this case? Does the issuing swarm carry away as an heritage the odor of the parent colony leaving it odorless? or does the new swarm go away odorless and have to set to work to prepare a new odor?

Colony Odor Constantly Changing

Personally, I do not believe that there is any such thing as a colony odor per se. I do believe that a colony has an odor at all times. This odor is constantly changing according to the condition and welfare of the colony, the condition and welfare of its queen possibly, and the season of the year. It frequently changes in summer, but becomes fairly constant in winter. All colonies in winter have much the same odor, but in the active season may carry different odors. I believe that the queen assuredly carries an odor and that her odor is not constant. It is not individual at all, rather might we call it systemic. By that I mean the odor of the queen is in direct relation with her condition. Queens in full laying carry practically the same odor; while queens, not laying, in turn, carry a specific odor. Queens just returning from a mating flight carry a specific odor and are readily received by strange bees as a rule.

Conditions Under Which Strange Queen Is Accepted

I rather think that odors please and displease bees, or give them pleasure on the one hand, and discomfort on the other. Logically then the odor of a queen must always please the bees if it is a normal queen odor. It is quite possible that a queen readily recognizes the fact that she is in strange surroundings and that anxiety, or fear, or some other reaction causes an odor to exude from her which rouses in the worker bees a nervous reaction often fatal to the queen. In like manner it is possible that the thieving bee in her nervousness may exude an odor which by instinct is recognized as inimical.

I do know from frequent observation that both queens and workers are readily accepted in strange colonies if they show no fear and go quietly about as if perfectly at home. I introduce hundreds

of queens by simply dropping them among the bees, and I unite pounds of bees every year by simply dumping them together. I can usually tell in advance whether the procedure is safe or not, and do not try it if conditions do not seem favorable.

Though I do not wholly deny odors as having a strong influence on bee reaction, I am strongly of the opinion that it is not odor in itself that is back of success or failure, but that it is bee action itself which is directly responsible for many bee-reactions.

Norwichtown, Conn.

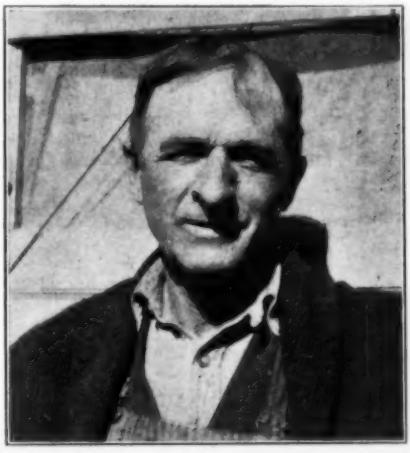
Bees, Chickens and Turkeys

E. R. Root

The Story of a Man Who Makes a Success of All Three

Shall we do one thing well, or attempt to do a lot of things poorly? Perhaps that is not a fair question, because some make a success or failure either way. Some make money in specialized farming. Others find it more profitable not to "put all their eggs in one basket." There are many more farmers who make a success in diversified farming than those who specialize in one branch of it. The same is true in beekeeping run in connection with one or more other pursuits. A failure of the honey crop does not necessarily mean a failure in poultry or fruit growing.

We have in Mr. W. Hildebrandt of Brawley, Calif., a sample of one who runs bees, chickens, turkeys, and an 80-acre alfalfa ranch, and makes money out of all of them. He so manages that one does not interfere with the other and perhaps here is one secret of his success. Of German extraction he and his wife are not afraid of hard work and lots of it, and that is another reason why they make them all pay. He and his wife do the most, if not all, of the work so their labor expense is not high. They draw all the income. They have m o d e r n conveniences, new and up-to-date automobiles, not the cheapest either, for they believe in having everything good, like all the things they have to sell.



W. Hildebrandt, Brawley, Calif. He keeps bees, turkeys and chickens.

A typical Imperial Valley apiary with grass covered sheds for shade. The sagebrush of the desert is shown in the foreground.

A close-up view of an Imperial Valley bee shed. The owner, Mr. Hildebrandt, believes in the food-chamber as an insurance for a honey crop.

At the time L. W. Boyden and I called there to buy his honey we "happened around" about eating time. We just had to "stop and take dinner." L. W. gave me the nudge to accept, and such a dinner! If that was "pot luck," as Mrs. Hildebrandt said, what must it have been if she had had a day's notice in advance.

We (I mean L. W.) bought his honey and at his price. If we had been on the market for eggs, chickens, turkeys or alfalfa we would have bought them also, because they were all of the best.

If our host is as good at chickens and turkeys as he is at bees, no wonder he succeeds.

Besides being a hard worker he believes in the food-chamber principle of beekeeping and that means leaving on the hives an upper story of good honey after the main crop is off. Incidentally, this kind of beekeeping does not require a large amount of work to get the bees strong enough for the next season's crop.

Mr. Hildebrandt uses the family car for his bee work. Note the honey tanks located outdoors.

In the Imperial Valley while the colony averages are not large, they are pretty reliable, taking one year with another—much more so than in the sage districts farther north in the state where one may get a bumper crop one year and almost a failure the next. There have been more failures of sage in the last five or six years than otherwise.

While the averages per colony in southern California from alfalfa and sweet clover are quite uniform, the summer seasons are awfully hot. I have spent one or two nights in there in the summer time. I didn't "enjoy" the nights.

In these days of the automobile it is easy to drive up into the mountains where it is cool. I suspect the most of the honey producers know how to adapt themselves to the heat.

The illustrations will give some idea of Mr. Hildebrandt's beekeeping operations.

Bee Labor in Producing Honey

Dr. E. F. Phillips

Startling Facts Regarding Energy Required to Gather and Store a Pound of Surplus Honey

[Honey occupies a most unique position among the foods, not only because it is delicious and health promoting, but also because it is one of the most marvelous of all the foods. The value of the wonderful facts connected with honey in promoting sales is not generally appreciated. Many people have become habitual honey consumers because they have read or heard some of the many interesting things about honey and how it is produced. In this article Dr. Phillips supplies facts that should be presented to business men's clubs, women's clubs, and public meetings wherever possible. They can also be woven into interesting stories for newspapers and magazines that are usually readily accepted. Let us tell the public more about the marvels of honey.—Editor.]

When honey is eaten and enjoyed, the vastness of the labor involved in bringing it to the table is rarely appreciated. The beekeeper labors in preparing honey for human use, the packer adds his labor (and often injures the honey), transportation companies cart it about, yet the energy expended in all these tasks is as a single floret in a vast field of clover compared with the energy expended by plants and bees beforehand.

Plants Elaborate Vast Quantities of Sugar

Plants everywhere produce sugar with great prodigality, using it for their own food, building from it their supporting structures and changing it into starch for later use. The energy in these processes they derive from the sun's rays. Out of this bountiful supply, some plants secrete a few drops of nectar, never representing more than a minute fraction of their total sugar production. But small as this fraction is, the nectar provides food for many species of insects, among them honeybees. While the honeybee is the most efficient nectar collector, because of its colonial life and collective behavior in gathering, yet even in areas where beekeeping is well developed, honeybees probably never get half the nectar secreted, and there are thousands of square miles in this country where honeybees are so scarce that their share is small.

When a bee takes up a load of nectar, it returns to the hive, and this food is either consumed soon or it is ripened into honey and stored for future use. All the time that the bees are gathering nectar and ripening honey, they are using food for themselves and for their brood. From what the bees do not need for their own purposes, the beekeeper takes his honey crop, and through years of experience he has come to use the word "surplus" as a proper term to describe the small proportion of the total honey production which it is safe to remove from the hives at the close of the honey flow.

Only Scant Proportion Becomes Surplus Honey

Thus in the chain of events from flowers to the table, the plants use most of the sugar which they produce for purposes other than nectar secretion, other insects get a major share of the nectar secreted, honeybees use most of what they get for their own purposes, leaving a scant proportion for human consumption. From the point of view of an efficiency expert, this is a bungling method of producing human food, yet it is the only means of conserving for human use part of the sugars which plants secrete as nectar. This picture takes on a different aspect when it is realized that plants produce sugar for their own use and not for insects, and that honeybees gather nec-

tar and ripen and store it as honey for their own use and not for man. The human link in this chain of events is the only one which rarely pays in full for what is received, and the only way that a beekeeper can pay for the honey taken from the hives is by assisting the bees to pass through periods of adversity which they encounter, and by protecting them from enemies and diseases.

It is difficult to believe that bees require as much food as they are reputed to use, but a simple experiment helps to an understanding of this need. If bees are confined in a cage and fed liberally, they will take up honey equal to their own weight. If the cage is now placed in a warm situation, preferably where there is constant light to stimulate the bees, at the end of about twenty-four hours they begin to die of starvation, with their honey sacs empty. They have consumed their own weight in honey in that time. Even this abnormal condition results in the expenditure of far less energy than that used in flight; and it has been found that even in the most dormant condition in which bees can be kept, they consume food more rapidly in proportion to their weight than man at the hardest labor of which he is capable. It is then evident that the food requirements of bees far exceed what the beekeeper takes.

Trips Required to Make a Pound of Honey

Bees make many trips to get a pound of honey. Each bee weighs roughly one five-thousandth of a pound, and each collecting bee usually carries about half its own weight in nectar. Thus ten thousand trips are required to bring to the hive one pound of nectar. Nectar loses about half its weight during the process of ripening it to honey, so that one pound of honey represents the result of twenty thousand trips to the field.

Bees travel long distances for nectar. They forage over an area roughly two miles in radius, and perhaps often go farther than has been thought. If an area of two miles radius is thoroughly covered, the average length of trip is over 1.4 miles, or over 2.8 miles for the round trip. If the outer half of the area is as well covered as the inner part, the bees have made three times as many stops in the outer half of the circular area as inside.

Twenty thousand trips for a pound of honey, each averaging 2.8 miles, makes a total distance traveled of more than twice the circumference of the earth at the equator; and even if an average round trip of two miles is assumed, this gives a distance of once and a half times around the world. The danger of such statistics is too evident to be emphasized, but in this case the figures do not lie.

A humanly constructed airplane can not fly such a distance without frequent refuelings, and the best non-stop flights would need to be repeated several times to equal this distance. This vast labor of the bees is divided among the inmates of the hive, but this does not reduce the fuel necessary to fly that distance. Bees are heavier-than-air flyers, perhaps more efficient than such machines of human make. But to propel a body through the air for such a distance, part of the time carrying a load equal to half its weight, requires a vast expenditure of energy and a vast consumption of fuel. In this case, honey is the fuel used.

The energy expended by bees in flight has not been determined, and it would be a difficult problem. They fly out light and return laden, so that the fuel used differs on the two paths. But an insect, however light, can not lift itself into the air and propel itself without a lavish use of food. There are frequent filling stations for the bees during a good honey flow, and when nectar is lacking they return to the hive for fuel. So in viewing such a picture, one is not surprised that bees require much food, his surprise is that there is ever any left for man to take.

Energy Required in Converting Nectar Into Honey

The energy necessary for carrying the bees and their loads fails to tell the whole story of the energy requirements in honey production. The excess moisture must be removed from the nectar, again requiring the use of energy. The sugars of nectar are more largely sucrose than those of honey, and when sucrose is split into dextrose and levulose, one molecule of water is added to each one of sucrose. In this manner an amount of water equal to 10 per cent of the weight of the sucrose in nectar is incorporated into the final sugars, but this also requires energy. Because of this fact, the elimination of water from nectar is not entirely due to evaporation, as is frequently assumed.

In order that nectar may be ripened to honey, the temperature of the hive is usually raised above that of the surrounding

air, usually several degrees. The heat which causes this rise in temperature largely comes from the heat produced by the brood, but this nevertheless requires the consumption of honey. The difference in temperature within the hive and that outside is greatest at night and on cool days, and cool days are frequent during many honey flows.

When water is evaporated from nectar, heat is absorbed, and this evaporation tends to lower the temperature of the hive. There is thus a constant balancing between this cooling and heat production, and it is surprising with what accuracy the temperature of the hive is controlled. The latent heat of water is high, and 535.9 small calories of heat are required to change one gram of water from liquid to vapor, in which form it passes from the hive. These figures give a basis for some interesting calculations. If the amount of water which must be eliminated from nectar is 20 per cent of the total weight, the heat necessary is that produced by the consumption of 5.46 pounds of honey. Nectar containing only 40 per cent of water is heavy, so similar calculations may be made for thinner nectars. If the loss of weight must be 30 per cent, the honey required to furnish the energy is 9.82 pounds; if 40 per cent, the honey weighs 16.37 pounds; if 50 per cent, 27.28 pounds; and if 60 per cent, 49.11 pounds.

These figures represent the necessary honey consumption for evaporating surplus moisture, assuming that all the energy used for this purpose must come from honey. This leaves out of account the heat absorbed from outside by the hive, and also omits the smaller amount of heat required to raise the temperature from that of the outside air to that of the hive. The figures are then of no great value and serve merely to suggest in a rough way the expenditure of energy involved in honey ripening.

Professor von Frisch tells us that honeybees are usually not attracted by nectars or a sugar solution which contains less than 20 per cent sugar. Nectars gathered by the bees usually contain more sugar than this. Whether or not the bees know it, they would not be wise to bother themselves with nectars that are too thin, for the evaporation of the excess moisture might require more energy than that furnished by the sugars in the final honey.

It might be remarked parenthetically that since so much energy is required for the elimination of excess moisture, it seems high time that the physics of hive construction be studied, so that a larger proportion of the heat necessary might be obtained from outside sources. So far we have built hives chiefly for the convenience of the beekeeper, and he seems of minor importance.

Energy Required in Elaborating Wax

The production of a pound of honey is always accompanied by wax secretion. For comb honey, the bees must secrete a considerable amount of wax for drawing out the comb foundation and for cappings. For extracted honey storage, they secrete a goodly proportion of the material used as cappings but may use old wax. They must also repair and often build out the comb, the amount of this work depending on how deeply the beekeeper has cut in uncapping. Even with the least possible amount of wax secretion, the bees probably produce more wax than is commonly assumed. If 20 pounds of honey are required for the production of one pound of wax, as beekeeping books usually state, this means an added reduction of the honey stores in storage of the final product. Whether the proportion be one to twenty or some other proportion, there is always some less from this source.

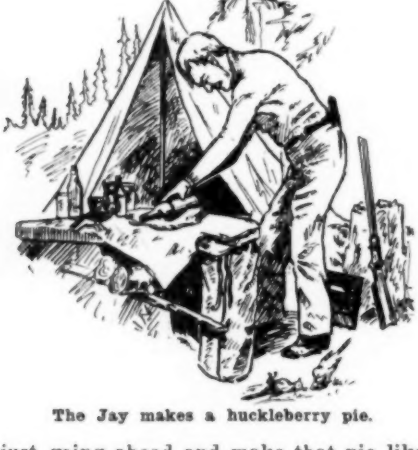
The wonders of a pound of honey carry us for their explanation into the chemical laboratories of the plant, into the equally mysterious chemical and physical laboratories of the hive and into the mysteries of the life of the bees themselves. Perhaps these mathematical computations mean very little in the efforts to understand honey; but they at least serve the purpose of showing that honey is no factory product, ground out by a machine, but that it is virtually a living material, the result of co-operative physiological processes of plants, bees and even of man himself.

Small wonder then that, in a recent book on honey, a French chemist used as his title, "The Mysteries of a Drop of Honey." Probably, as he worked through the book, he came more and more to realize that in order to understand what happens in honey, he should reduce his considerations from car lots, tons, or even pounds, and get down to small units. Truly honey must be an energy food—so much energy is expended in producing it.

Ithaca, New York.

Honey Cooking for Men Only—No. 2.

AS there were hundreds of acres of wild huckleberries there, and they were ripe, we thought it would be a fine thing if we made a huckleberry pie, as we had heard that huckleberry pie was the best thing in the pie field. But our book on camp cookery never mentioned pie. Probably the author of that book considered pie in camp not in good form. But, shucks, anyone ought to be able to make a pie. I told my partner that I was



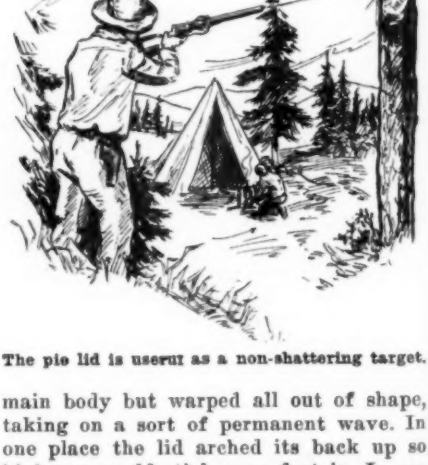
The Jay makes a huckleberry pie.

just going ahead and make that pie like Michael Angelo said he mixed his paints —with brains. Here my partner cautioned me not to do it, for, if I did, said pie would be too soupy. I made up some biscuit dough and put in a lot of baking powder. I rolled the crust out on the table which was made of logs chopped as smooth as we could, which was not a bit smooth. Where there was a knothole in a log the crust was treble strength and where a limb projected, said crust had a puncture. How nice it would have been if I had had a recipe by Miss Fischer; but that was before her day.

I was not pleased with the body of that pie. It was not a Fisher body. There were large numbers of those interesting birds there known as camp robbers or Canadian jays. May be it was a case of "birds of a feather flocking together." These birds are naturally tame and will eat out of your hand. They were always stealing our meat off the table even while we were eating. I offered them some of my pie crust, and one of them even went so far as to eat some. My partner said, "Those birds are sure good sports and are willing to try anything once."

I laid a huge slab of that crust in a large dripping pan, set it into the reflecting oven, filled it up with huckleberries, and poured in some clover honey. Then I proceeded to shape a lid for the pie. For a rolling pin I used a ketchup bottle. There were raised letters on the bottle so our pie was beautifully decorated with embossed letters with the word "Heinz" in several places.

When the lid was complete it was laid on. Then a fire was built in front of the oven and I anxiously watched for results. Well, they came sure enough, but not the kind I had hoped for. When that pie with an over-dose of baking powder in it began to get warm, it swelled up like the oft-mentioned poisoned pup. Then again the lid did not adhere properly to the



The pie lid is useful as a non-shattering target.

main body but warped all out of shape, taking on a sort of permanent wave. In one place the lid arched its back up so high you could stick your foot in. In another place the lid dipped down so that a lot of the goody ran out into the fire.

At last the pie was done, or at least it averaged done. The part next the fire was done to a nice black, while the back

(Continued on page 534.)

From the Field of Experience

NEGLECTED COLONIES

Bees in Hands of Careless Become Menace in Neighborhood

Let all things be done decently and in order. —I. Cor. 14:40.

Entangling alliances with every conceivable kind of container for bees and foul brood seem to go hand in hand. I have just spent a few days with an inspector in a territory that is badly infected with American foul brood and it is interesting to know in what varied containers people have managed to keep bees.

Barrels and kegs, I suppose, belong naturally to the monstrosities into which people hurriedly put a swarm of bees, promising themselves to transfer them at a more convenient season. But convenient seasons are rare in a busy life, and bees build comb rapidly, and ere the careless keeper is aware, his thoughts of transferring are deferred until the inspector arrives, and then red cross marks and confusion follows.

But while in this instance barrels and kegs were found to be entirely too popular they by no means were the only nuisance.

One man had his bees stored in a low roofed poultry house with but few windows, and a crowded door through which the inspector could scarcely enter. The bees were elevated to near the low roof, and one or more supers were crowded on each hive. It would have been comic had it not been tragic to observe this patient inspector pass from entrance to entrance, amid an entanglement of irregular wire fencing, sticking his nose into every hole that emitted bees, trying to determine by the sense of smell whether or not this bunglesome beekeeper had the foul brood to which he was most certainly entitled. It seemed that it would have been necessary to have lifted the roof of the poultry house to have gotten to the bees in any other way.

Another man with sufficient acreage to keep many colonies of bees out in the open in a perfectly respectable manner, had conserved room by placing his bees in the loft of his garage, which was not a loft, but a shelf which he had built for the purpose. I think the soberest man in America would have grinned a bit to have seen that long suffering inspector climbing up on slanting 2 x 6's and in a semi-suspended position pry into those foul smelling hives.

But the climax came when we found bees stored away in refrigerators. Think of it! There they stood in all their cold majesty, mule hide roofing on all their sides and top, broad home-made frames within, cold metal next to the bees—shades of pickled brood, it was a cold proposition!

All of these peculiar arrangements were well infected with American foul brood, and the good-natured inspector took valuable time and exercised limitless patience in explaining better methods of beekeeping.

I wonder why keeping bees could not be done decently and in order.—Rev. J. R. Stelle, Montpelier, Ind.

PRINCE BECOMES BEEKEEPER

Forgets Splendors of Imperial Russian Court to Keep Bees in America

Seldom has the Home of the Honeybees at Medina had a more distinguished visitor than Prince Maksoutoff of Russia—distinguished because the blood of 24 generations of nobility flows through his veins; distinguished again because he was commander of 17 warships for the Imperial Government of Russia during the great World War.

How he escaped from the doom brought on by the Red Revolution to most members of the royal family is not told. His family, save one, is all gone. He is here in this country after a varied and exciting experience during which he worked in Europe at various odd jobs from a common laborer to a carpenter and mechanic, and finally to a position of quartermaster on the Davenport, an American cotton ship where he was classed as an able seaman, of course.

He finally landed at New Orleans where he took out his first naturalization papers for American citizenship, for he decided that in free America he would have a chance to start all over again at the age of 60. He drifted to Detroit where he has relatives, and then came to Medina, the Mecca of all beekeeping.

Back in the palmy days of old Russia, when he was a prince and commander of a Russian squadron of warships, he loved bees and kept them successfully. His honey took first prizes at what we would call county fairs in this country. During all of his varied experience since then he has never lost interest in bees. The former prince and Russian commander will now become a beekeeper in this country.

Prince Maksoutoff, now an American citizen.

The extreme change, from royalty, a prince, an officer of high rank in the Russian Navy, memories of which linger even yet to him like a dream, to a common every-day man willing to do an honest and hard day's work, would appall and discourage most men of rank, but not our hero. He is every inch of that and more. He will from now on be plain Mr. Dimitri Maksoutoff, a beekeeper by profession and calling. All honor and praise to a man of that kind of pluck and courage, willing to start all over again at the age of 60. He is, of course, educated and refined; is a genius in many ways. He speaks several languages and seems to be much at home in his English. The Akron (Ohio) Beacon Journal recently published the following concerning him:

> He knows bees and so he is choosing the bee business for his livelihood in America. "All zat," he gestured his arms, and one could see fading away the pomp and glory of Imperial Russia, the black fleet of Russia which he had commanded, the 24 generations of nobility—"All zat is yesterday. I do not think of it. I am starting ofer." * * * When he shakes hands his heels snap together in military fashion, and he bends stiffly at the waist.

And he starts over again at the age of 60 when most men would curse fate and die. This journal, and, in fact, the whole beekeeping fraternity of the United States extends to this prince (and he is every inch a prince) the right hand of fellowship and good will. May he live and prosper as a beekeeper and as a plain Mister. He will find that Mister an honorable title of which we common folks feel proud.—E. R. Root.

DRAINING HONEY FROM CAPPINGS

Propolis on Cappings Injures Flavor of Honey in Capping Melter

Orange honey is one of the finest of honeys when properly ripened and capped over by the bees. Being of a delicate flavor and color, it is very easily damaged for table honey.

One of the first things bees do after capping honey is to paint the cappings with propolis. We call this travel stain. Some years ago, I had a leaky cover on a colony making comb honey, so I put a sheet of asphalted roofing paper over the super. The bees took much of the asphalt and used it to paint the sealed comb honey (travel stained it) until it was black—spoiled, of course.

Now here is where the main harm of the capping melter comes in since it heats the travel stained cappings and the honey together. The amount of damage depends on the quality and flavor of the propolis on the cappings. To avoid this, I use a large uncapping tank with a screen a few inches from the bottom and a pipe to drain the honey into the main honey tank. I keep a hoe with a two-foot handle in one end of the tank and occasionally I scramble the cappings. This causes them to drain readily.

Next morning I remove all cappings of the day before as most of the honey has drained out by that time. I have a large tank with a screen false bottom placed inside of a building so the sun will not shine on it. I put the drained cappings into this tank and leave them there to drain further for three or four months. I have never been bothered with moths in cappings that have been scrambled.

The honey from the draining tank is of an inferior grade. I sell it for what it will bring and never mix it with good honey. The cappings will drain so dry that they can be put into burlap sacks and stack-

ed without honey showing on the outside of the sacks if left for weeks.

When the busy season is over I turn my attention to the cappings. I spray them with water, as near as I can guess as much water as there is honey in the cappings, then run them through the capping melter. I then strain this watered honey and settle it in a tank after which I boil it for two or three hours, then while boiling hot pour it into 60-pound honey cans with good screw caps. I screw the caps tight while the honey is quite hot, and if a good job is done the cans will draw inward when cool. This watered honey will keep indefinitely, and is safe to feed bees any time. I label it when put up and by whom.—R. Powell, Riverside, Calif.

A Beekeeper Told It

She Landed Him in the Insane Asylum

Here is a story, if you have a bit of imagination to re-set the scene, that will make you smile—or laugh out loud. It is told by our good Hungarian friend, Rudolph Panevacs, now a resident of the Canal Zone, Isthmus of Panama. After reading it, let no Yankee say that he and his countrymen are the only simon-pure A No. 1 practical jokers. But here's the sketch:

Las Cruces, Canal Zone, July 2, 1930.

It was in Budapest, capital of old Hungary, where a lot of good men met to talk over bees and honey. They were, with the exception of one, all of the old school, everyone the owner of a little bee house where the straw skeps stood neatly side by side. Mr. Balogh, however, had been abroad and had seen and learned and adopted the methods of other people. In short, he was a modern beekeeper and what he knew about bees and the results he got out of them seemed incredible. In all his great country, Uncle Sam has never had a better lot of Missourians than those Magyars turned out to be. They were willing to believe but they had to be shown first. This was just what Mr. Balogh wanted. He extended a hearty invitation to them all to come to his apiary. When time permitted, they were off for his place, where, with his demonstrations, he showed them even more than he had told in words before. All were satisfied, and they were full of praise for Mr. Balogh, who, however, would have none of that, as he said he merely helped his bees, while the real credit for their achievements belonged all to his Italian queens.

Now, there was in their company a Mr. Balazs, who, during all the time had nothing to say. Instead, his eyes and his whole being concentrated on those Italian queens. The gurgling in the depths of his throat told the world that life for him was no more worth while unless he became the owner of one of those Italian queens. Mr. Balogh noticed it, and from a nucleus took a nice queen with some worker bees, put them in a cage, and, giving the necessary instructions, made Mr. Balazs a present of it.

Mr. Balazs was at once the happiest man in the bunch. His eyes beamed and again the world was his. With great tenderness he tucked his new fortune in his inside coat pocket, and, with the meeting at an end, the party again was ready to take the train back to the capital.

But there also was in that party a Mr. Bogdar, who was always alert to grab a chance for a good joke and here he found one.

Before boarding the train for home he phoned to Lipot Mezo, which is the insane asylum of Budapest, asking that they would send an ambulance to meet his train, as there was a party bringing a demented man who had the idea that he carried all the royalty of Europe around in his pockets.

The train arrived, as did the ambulance, and the doctor, with his assistants, was looking for his prey. There came Balazs, with Bogdar behind him, winking to the doctor as to say, "That's him, that's him." The doctor stepped up to Balazs, and greeted him upon his arrival at the capital and invited him for a nice ride. All the nice promises were made to him with which the officials usually coax people into the mad house. Balazs looked at the doctor, and the doctor looked at Bogdar, for, after all, this man did not seem so unreasonable to him. But Bogdar nodded as if to say, "It's him, it's him," and pointed at Mr. Balazs' inside coat pocket. So the doctor asked Balazs what he had in his coat pocket.

"Why, the Italian queen," said Balazs, "what do you want with her?"

"TAKE HIM," said the doctor to his assistants, and away they took him before he knew what had happened to him.

DR. HARVEY W. WILEY

The Great Apostle of Pure Food Honestly Labeled Passes On

This great and good man, after many years of public service in the interest of pure foods and drugs honestly labeled, passed away on June 30. If ever there was a man who was both loved and hated, misrepresented and lied about, who could have had a fortune for just keeping still, Dr. Wiley was that man. He was a man of high ideals who had the courage of his convictions, and was a born fighter for what he believed was right As chief of the Bureau of Chemistry, in spite of misrepresentation and underhanded opposition, he got through the Food and Drug Act of 1906. Even after the law was enacted, his old enemies of the glucose and corn sugar interests continued to harass him. They finally succeeded in having created the Remsen Board, which apparently had no other purpose than to put the brakes on Dr. Wiley. By various subterfuges his old enemies would have scrapped the Pure Food Law itself had he not kept up the fight. He was grilled by congressional committees, lied about in the papers where powerful interests sought his undoing. Most men would have resigned and quit the fight, but not Dr. Wiley.

Dr. Harvey W. Wiley.

An implacable foe of adulteration and misbranding, he kept on fighting. He sought the aid of the newspapers. He pursued the lawbreakers all the harder and even after he did resign, he kept up the fight through the press and platform more relentlessly than ever.

It was on one of these lecture trips for the Redpath Chautauqua that I first met him here at Medina. I said, "Dr. Wiley, of course you don't remember me. I am E. R. Root, who did my bit to get your pure food law through in 1906." "Remember you!" he said, grasping my hand warmly, "I should say I do. You are the man who with the Heinz Co., saved me from being fired from the Department at a time when I was in greatest need of friends among the honest packers." Then turning to the superintendent of the Chautauqua, "I would like to have Mr. Root introduce me today to the Medina audience."

To introduce such a man at his own request I felt was an honor indeed, and in doing so I said that I loved the man for the enemies he had made, meaning, of course, the old glucose crowd which had been after his scalp for years.

I shall not soon forget my last interview with Dr. Wiley as he sat in his chair, bolstered up with pillows, at his home. He said something like this: "It is kind of you to keep up this fight when I can fight no longer. I can't tell you how I appreciate it." There was a look of sadness in the face of the old warrior who was willing to give his life for the cause. This is precisely what he did. His last effort before the Congressional Committee was too much for him—the end soon came.

In one of his letters to me he wrote:

> I fear my activities are over. I am getting more feeble every day and I do not believe my doctor is going to rescue me in any way from my unfortunate condition. So I must reluctantly drop out of the fight to maintain the integrity of the pure food law.

One of the very last things he did was to send his wife to see a congressman to plead for the preservation of the Pure Food Law.—E. R. Root.

From North, East, West and South

Southern California

June gave the beekeepers of the white sage and wild buckwheat ranges a great "come-back" in southern California after the disappointment of the black sage. All colonies of honey-gathering strength filled their supers and many have not only filled one, but some two and even three, and the flow is still going strong at this date, July 5. It is the old, old story over again. Always be ready and you will reap the harvest if there is any. Plants look well and if the weather continues as mild and balmy as at present, with the cool nights we have been having lately, the wild buckwheat should yield well through this month. Sumac is yet to be heard from, but many of our ranges do not have enough of this bush to amount to anything. It usually blooms the last of June and first part of July. It is a very uncertain yielder of nectar but when it does furnish honey it is of a beautiful light amber color and a pleasing flavor.

Nine Thousand Colonies of Bees Were Moved Into Riverside County for the Orange Honey Flow.

I guess that I will have to revise my figures of a month ago as to the number of bees moved into our county from outside localities as we have been informed that the number is nearly nine thousand colonies.

One good side to the situation is, that it is usually the best, most up-to-date beekeepers that migrate and try all the practical methods they know of to produce honey and make the business a success. And another thing is that if one gets honey they all get honey. This applies to the orange as well as to other locations.

Fair time will soon be here and the writer has been looking over a number of premium lists, state, county and district. Of them all, he finds none that come anywhere near that of the Southern California Fair at Riverside. We find that there is a list of cash prizes amounting to between $375.00 and $400.00 for honey, beeswax, bees, and honey-sweetened bake stuffs. Just how much good this does the honey producer is hard to say, but one thing is certain, all other lines of produce spend time and money in advertising their wares, so why not the beemen? Of course, it always falls on a few good fellows like our Chas. Kinzie to do a lot of work, but we who know appreciate it and hope that they will live long to carry on the good work.—L. L. Andrews, Corona, Calif.

Northern California

Honey flows continued to be disappointing during June. Cold, wind and fog influenced both nectar secretion and gathering. In the valleys feeding was necessary to maintain strength in some sections, while even alfalfa yielded only enough to maintain colony strength. On the west side of the Coast Ranges sage yielded better than in most sage sections, but the honey is darker than usual due to mixture with cascara. On the east slope sage was a failure. In the Sierra foothills some surplus was stored from cascara, toyon, and bear clover, but considerable buckeye poisoning was reported among poorly located bees. The alfalfa in Honey Lake country has yielded sparingly and the district is reported as overstocked. Conditions improved during the last few days in June and early July when alfalfa began to yield better and cotton began to bloom later than usual. At this time, July 9, the weather has become cloudy and cool. It is still too early to judge the star thistle, but prospects are normal or less at this time and bees that were not moved to the hills are subnormal in strength.

Migratory Beekeeping is Carried on on an Extensive Scale in California on Account of the Great Variety of Honey Plants in the Different Localities.

More than 125,000 colonies have been moved in California during the past six months. This is slightly more than the usual migration for this period. One is surprised at times at the system and ease with which this hard work is done. Interstate migration of bees on combs has been greatly lessened by embargoes, although several carloads have been shipped in packages this year, indicating that there has been little decrease in interstate mi-

grations this year. Bees which formerly went on combs have gone this year in packages. This requires two sets of equipment. This begins as an experiment which will result in increased migrations in years to come should it prove economical. In years past migrations were limited by car space, but more bees per car can be shipped in packages with perhaps less labor.—Frank E. Todd, Sacramento, Calif.

Texas The weather for June would have been fine had it occurred in May. The drouth continued until the second week in June. Horsemint burned up and mesquite failed to bloom. The bees still found sufficient nectar to keep alive, but stored very little. The last week of the month the scale colony showed the first addition in weight for this year. Several pounds were put on. For the lack of other information we are giving the credit to cotton as this was the only plant in bloom. The weather conditions were below normal in temperature and those from the North who think Texas is a hot country, should observe that 97 was the highest point reached in San Antonio during the month of June.

August 15 is a Critical Date in Localities Where There Has Been a Failure in the Honey Crop.

The prospect for a honey crop this year is gone. However, there appear to be sufficient plants in good shape so that the bees will gather winter stores. Cotton in years similar to this has made fair yields on sandy lands. Whitebrush always gives us a few pounds of surplus in the fall and broomweed is looking the best in years. Beekeepers all over southwest Texas should watch their hives closely and by the 15th of August, if their hives are still empty, they should move them to the hills for kinnikinnick or feed sufficient sugar to give the bees brood for a worker force with which to go through the winter.

In continuing the study of what makes a plant a honey producer, the statement formerly made has been found to hold good. Introduced honey plants, which include fruit trees and a large number of vegetables do not have an established set of native insect visitors. Introduced insects, the honeybee being the chief among them, have no established set of native food plants. As a result the introduced insect is the dominant feeder on introduced plants. This principle may also apply to horsemint, mesquite and bitterweed, which are probably recent migrants into Texas.—H. B. Parks, San Antonio, Texas.

Manitoba The month of May in Manitoba was cool with high winds and some severe dust storms all through the month, and bees have not built up very well except in cases where they were supplied with honey much beyond their needs.

It seems that this is one lesson that few beekeepers can learn. The temptation is to leave or give barely enough to keep them going, and the result is serious if there is a cool and windy spring. Reporting on one large apiary, one of the inspectors states that only one yard belonging to this man was in excellent shape. It was on Jumbo combs that could not be extracted the fall before because the operator's extractor was too small to take them. The yard of Jumbos had hives filled with bees while the standard-frame hives were only fair and all short of food. All had been made up from packages.

Queens Shipped in Packages Without Candy or Attendants Were Not Superseded While Others Were.

Plant growth at this date, July 3, is rank with abundant moisture, but sweet clover fields are patchy due to poor germination last year. It is pretty hard to tell whether we will have a crop or not.

Just another word about dry queens with package bees. I read, in the 1929 report of our Dominion Apiarist at Ottawa, that, in an experiment with twelve queens, six purchased in packages with the usual candy and attendants, and six with queens in empty cages without candy or attendants, all the queens with candy except one had been superseded before fall and all the queens without candy or attendants went into winter quarters.

This year we have six disease inspectors and the province will be more than half covered. We are gradually enlarging our clean-up areas and are well pleased with the results of the clean-up. The sparse population helps greatly in cornering the outbreaks and everyone seems better satisfied in the long run when all dis-

eased colonies are burned, although at the first it seems hard medicine to the ones who lose.—L. T. Floyd, Winnipeg, Manitoba.

Arizona The mesquite and catsclaw honey flow is over (July 2) for this year here. The flow from this source lasted on the average only about twenty days. There was general complaint about the damage done by stormy weather during the honey flow. There is at present a second mesquite bloom on, the heaviest second bloom I have seen in quite a while. However, the bees are working it but very little, due perhaps to the intense heat.

Some producers report receiving more than last year, while others report less, so I suppose the crop from mesquite and catsclaw will be about the same as last year. This is not saying much, for it is very seldom we receive a bumper crop in Arizona.

Very few producers practice migratory beekeeping in Arizona. This is due, perhaps, to the uncertain seasons and crops here. After one moves bees to new locations he may not receive enough out of them to pay for the moving.

Summer rains came about ten to fifteen days earlier than usual. These did more damage than good, for they cut the mesquite and catsclaw flow shorter. They may bring up enough wild flowers for bees to secure their winter stores.

I have not heard of any large lots of honey being sold so far, so I have no idea just what the price will be here this year. —L. Wedgworth, Oracle, Ariz.

Saskatchewan The districts which produce most of Saskatchewan's honey, the eastern and northern parts of the province, have enjoyed very good weather for bees during the past month. Early June was cool and delayed the bees a little, but frequent rains in these parts of the province have brought the summer flowers and clover along in good shape. Mustard and Frenchweed have been particularly plentiful this year, and the bees have worked them both heavily, and built up in good shape for the sweet clover which has just been in blossom for a few days. Even though little rain is secured from now on, a fair crop will be harvested in these sections of the province.

While the east and north sections of the province are enjoying favorable weather, the central west and central south sections have been having just the reverse. Here heavy winds have caused severe damage and bees were confined to the hives for days due to the wind. As little or no rain fell, the crops have suffered severely and are in many cases a total failure. Many farmers have seeded as many as three times. Clover is a failure in these sections and the colonies held back and weakened by the wind will do little this year. However, as there are comparatively few colonies kept in these districts, the honey crop of the province will not be greatly reduced.

During the past few weeks all districts in the province, where disease was found last year, have been reinspected and so far only two further cases of American foul brood have been found. A few more will likely turn up during the summer but we feel that we are now getting the disease situation well in hand. A province such as Saskatchewan, where beekeeping is just getting under way, has a great advantage in this respect over provinces where beekeeping is an old and established business.—R. M. Pugh, Regina, Saskatchewan.

Utah There is nothing very flattering to report from this neck of the woods at present. Bees have made only a living since May 10. Cool, unfavorable winds from the north most of the time during May kept the bees from breeding as they should, so many colonies are not in condition to secure a crop unless it should come in August. So far it has not been a nectar year. For profuse nectar secretion, we must have plenty of deep moisture, then proper atmospheric conditions to go with it. For this region that means cool nights and warm days with a little electric humidity in the air.

But our conditions are just the opposite. With a very arid condition of both soil and atmosphere, and with a temperature of from 86° to 90° during the daytime, evaporation is taking place very fast. The second crop of alfalfa is ready to bloom, but it is drying up on the unwatered land, and there is not water enough to mature the alfalfa and beets. These are the conditions as they exist at present.

If we should get a good rain which

would make a radical change in soil and atmosphere, there still is a chance to get some surplus honey in the next sixty days; but I don't look for it, while I still hope. A representative colony on the scales since June 10 has not gained one pound.

I see by the last government report that the country as a whole is below normal except the intermountain region. If the rest of the intermountain region is no better than this section of Utah, the honey buyers should get busy picking up all left-over honey; but I realize that sometimes it is the unexpected that happens. —M. A. Gill, Hyrum, Utah.

Nebraska The winter of 1929-1930 was the coldest on record, and as bees in Nebraska are wintered on their summer stands without protection, many beekeepers spent anxious months wondering whether they would have any bees left. When the temperature reached 38° below and remained below zero for 24 consecutive days, they were sure they would not. However, the bees did winter very well and where they had an abundance of stores built up into fine colonies.

New Bee Law Supported by a Tax of Ten Cents Per Colony Is Now in Operation.

Nebraska's new bee law is now in operation for the first time. This law was passed two years ago but no state appropriation was made. Money to finance its operation was assessed against each colony of bees at the rate of ten cents per colony, and collected by the county treasurers, along with the personal taxes. The efforts of local beekeepers' associations to get every colony of bees assessed resulted in several thousand more colonies being assessed in each county than ever before. It is the hope of the associations that this increase will result in a lower assessed valuation of each colony, and thereby save the beekeepers enough to pay for the bee law in lower taxes.

Crop prospects for the coming season are none too good as dry weather has hurt much of the white sweet clover where it is not irrigated. It is now yielding freely along the North Platte Valley. Alfalfa suffered severely from unseasonable weather, and much of it was cut and raked to give the second growth a start, and did not bloom to any extent.—Ralph W. Barnes, Morrill, Nebr.

North Dakota Conditions during the early part of the season, although not favorable for much nectar gathering, were fairly satisfactory for brood-rearing. Colonies built up slowly, but largely at the expense of reserve stores carried over from the previous year.

This season sweet clover was first noticed in bloom on June 6, which is slightly earlier than usual. There was not sufficient of this pasture in bloom, however, until about two weeks later to make an appreciable difference in hive gains. Starting on June 21 scale colonies began to show real gains in weight. On that day one of the scale colonies in the experiment station apiary gained eight pounds, while its nearby competitor showed seven pounds gain in weight. A period of unsettled weather from then until the end of the month retarded nectar gathering. On July 1 the two colonies showed gains of nine and ten pounds respectively. Since then the daily gains have been fairly regular.

Migratory Beekeeping Was Necessary in Many Cases This Season on Account of Spotted Condition of Sweet Clover.

Of the various problems which beekeepers have had to face this season, the lack of sweet clover plants appeared to be the most serious. Many of the beekeepers not only in the Fargo vicinity but in other sections were forced to haul their colonies by truck, in many cases considerable distances to clover fields. Wet weather during early May made side roads almost impassable and consequently made the moving of apiaries rather difficult. To date most of the beekeepers with whom I have talked tell me that they were fairly successful in locating their bees near good clover fields. Some have found excellent locations that heretofore were overlooked. In this case, the necessity of moving is probably a blessing as it has opened up new territory and will have a tendency to prevent overcrowding in the near future.—J. A. Munro, Fargo, N. D.

Michigan The crop outlook remains unchanged, several large producers reporting very little alsike and white clover, and sweet clover being cut for hay. Basswood is yielding in some

districts, but the yield of surplus to date is considerably below that of last year.

Some of the unusual symptoms and resulting confusion in diagnosing European foul brood, which has been particularly bothersome this year, and which is not clearing up as rapidly as usual at the approach of the honey flow, may be due to the presence of an organism new to investigators, which Dr. C. E. Burnside of the Bee Culture Laboratory at Washington, has been studying. Mr. E. L. Sechrist, who has been studying costs of production in Michigan, reports that while it has not yet been found possible to cause death with this new germ, its presence in larvae already affected may result in an appearance very similar to that of American foul brood, except for smell, which is different.

Recent trips through northern Michigan and particularly the clover district of upper Michigan, find honey plants in good condition, and beekeepers more optimistic than in southern Michigan. Considerable trouble is reported from bears.

All plans are complete for the Ohio-Michigan Beekeepers' Auto Tour, August 5-8, and all who are interested in seeing Michigan from one end to the other will be given the opportunity. Every attention is being given to the care of our visitors, and it is hoped that many will use this opportunity for a pleasant outing.—R. H. Kelty, East Lansing, Mich.

Northern Indiana

As compared with last year, there will be very little alsike or white clover honey produced this year in northern Indiana. On a trip through the northern and central part of the state not much clover was to be seen. For the most part, weather conditions have been unfavorable throughout June, cold north winds followed by hot dry winds having prevailed. It is true that bees located near fields of clover in some instances have done fairly well, but on the whole, I doubt if there will be half of a normal crop from alsike and white clover. An abundance of basswood blossoms have helped out and weather has been favorable throughout the blooming period. At present writing (July 6) sweet clover is yielding well. Bees are in good condition with much less swarming than usual.

A considerable amount of last year's honey has been held over on account of market conditions and producers are hoping to be able to move it this year. Owing to inability to sell their surplus a good many are desirous of quitting and are trying to dispose of their bees, but it seems that another new beekeeper is born every minute.

One difficulty in holding honey over is that cans rust on the outside, necessitating a change to new cans when marketed. Wiping new cans over with an oiled cloth before filling, and keeping in a dry place helps to some extent, but still they rust owing to condensation of moisture when the weather turns warm.—E. S. Miller, Valparaiso, Ind.

Western Ohio

At this writing the weather is dry and hot. The honey flow is nearly to a close with about 25 per cent of a full crop. This has been about the poorest season on record in northwestern Ohio. Alsike was a complete failure and white clover not much better; sweet clover was very good where there was a stand, but it seems that farmers are not sowing as much sweet clover as they did a few years ago, and where they do grow clover it is plowed under when it is about one foot high, which is very discouraging for the beekeeper. The months of May and June were very dry and unfavorable for plant growth which resulted in a dwarfed plant condition; therefore the clovers did not produce nectar. Basswood flow was good when weather conditions were favorable, and some surplus was obtained from this source.

Beekeepers are somewhat discouraged. However, this will give us plenty of time to look over the bees and see that there is no disease. All poor queens should be replaced with a good young queen as queens are very cheap at this time of the year. More and more beekeepers are learning that it pays to have young queens in their colonies during the latter part of the summer. It was noticed many years ago that the largest yields usually came from colonies that were parent colonies the last season, the reason for this being largely that the parent colony had a young queen during the latter part of the season, while the swarm usually retained the old queen. Young queens that begin to lay in July or August lay more eggs during the late summer and autumn than older queens, thus supplying the col-

ony with more young bees for winter. These young queens are also in their prime the next season when they are expected to do their best working during the heavy spring brood-rearing period. While it may not always be advisable to replace the queens every year, the tendency for beekeepers to do so is increasing when comb honey is produced. Queens usually will give good results longer in the North as the burden is somewhat decreased on account of the shorter seasons. In such cases, it may be well to keep the queens two years, but wherever the queens are worked hard we are coming to believe that it pays to requeen every year. In a large part of the country there is no better time for doing this than during the latter part of the honey flow in July.—Fred. Leininger, Delphos, Ohio.

Ontario The weather here in Ontario has continued to be very erratic. There have been but few really hot days to date, and whenever we have had one of our numerous showers, cool and cloudy days have followed with high winds, generally from the north. Alsike and white clover do not yield well under such conditions. Whenever the weather has been warm enough for bees to work, there has been a light flow from some sweet clover and from alfalfa that is being left for seed. Alfalfa seems to be yielding more nectar than it was a few years ago. Just why, I am at a loss to explain unless it is because of soil inoculation.

A Dearth of Nectar During Three Weeks Following Fruit Bloom Caused Queens to Stop Laying, Resulting in Colonies in Poor Condition for Clover

While it looks like a light crop of honey this season as compared with a year ago, our prospects are further reduced by the colonies not being in good condition. In our experience as commercial beekeepers, we have had a few seasons when bees were very strong, yet we got little honey. We have also had at least two seasons previous to this when the flow of nectar was fair, yet we got a small crop because our bees were in poor shape at the time the honey flow was on. This is the third season that we have to report that our bees were in poor shape to take advantage of the honey flow, even if it had been good. While we had some apiaries in fair shape, most of them were anything but good. Following a long cold spring, we had three weeks between fruit bloom and clover that were an absolute blank so far as nectar was concerned. Bees got very low in stores, and, although we fed many right along, the queens practically stopped laying at a time the bees should have been reared to harvest the clover honey crop.

Only one result could be expected, and that is what happened. Shortly after clover opened, the adult population of the hives melted away, leaving lots of brood and baby bees not old enough to go to the fields. Now that alsike is about over, the colonies are just in real shape for storing. Although the honey flow has been light, judging from what colonies that were in good condition have done I feel that a fair crop would have been secured if bees were in better shape. As it is, we expect a crop much lighter than last year. Possibly we may average around 75 pounds per colony. If early buckwheat does not interfere, we may get more in sweet clover sections, but if buckwheat does bother our crop of white honey will be less than that amount. Prospects are very good for buckwheat as much moisture is in the ground, and the acreage is about as usual.

In localities where there is enough basswood left (there are very few such places I am sorry to say) prospects are fine for a honey flow from that source. Never have I seen more bloom and it is hard to find even a small tree that is not loaded with buds about ready now to burst into bloom. We count on little from that source, but a good crop in some sections would not surprise me.

What about prices for the crop of 1930? That is a question I am having fired at me through the mails every day. I wish I could answer it satisfactorily for my own sake if not for others, but frankly, under the present rather cloudy financial conditions, I do not feel like making even a guess. In so far as Ontario honey is concerned, there is no use trying to dodge the fact that our markets for honey are largely governed by export demand. With the tariff barriers being erected in so many countries, our logical market is Great Britain and her dominions, and I confidently look forward to the time when this great commonwealth of nations, including Canada, will be trading with each other on a preferential basis. When that time comes, I shall look forward to a revival in the honey industry.—J. L. Byer, Markham, Ontario.

Heads of Grain from Different Fields

Suggested Improvement for Honey Cans I notice that the ordinary 60-pound honey cans corrode or turn black at the cap. This sometimes causes considerable loss of time in making them look presentable and sometimes the first honey poured may be stained. I believe the spouts of these cans should be lined or made entirely of some non-corrosive material.—LeRoy Davis, Nixon, Texas.

Killing Grass at Hive Entrances More or less annoyance is caused by the growth of weeds or grass before the hive entrances; this can be prevented effectively by oiling a desired space, using old crankcase oil—not very much is required. Clear the space before oiling. A sprinkling of dust or ashes to mask the oil will prevent annoyance to the bees. One application will continue effective indefinitely.—C. D. Cheney, Lyndhurst, N. J.

Help Preserve Beekeeping Literature American beekeeping has made progress slowly but surely, and a history of this development can be found in our bee journals. It is very unfortunate, however, that much of our beekeeping literature has not been preserved. There are a number of bee journals known to have been printed of which there is not a single number now recorded in any of our beekeeping libraries. Hundreds of volumes of bee literature have been burned or sold to junk dealers, and it is quite possible that complete files of all of our bee journals can not now be collected and preserved for posterity. In this way, a certain portion of the history of the development of the beekeeping industry in American will be completely lost. I am therefore taking the liberty through the kind assistance of the bee journals to send out a last plea to our beekeepers, asking them to insure the safe keeping of our beekeeping literature by sending in odd lots of even single numbers of bee journals to our beekeeping libraries. To our friends in Canada, we make a special plea for odd lots of "The Canadian Bee Journal," the "Canadian Honey Producer," and any other journals that may be known to them, and of which we have no record.—H. F. Wilson, Custodian, The Dr. Charles C. Miller Memorial Apicultural Library, the University of Wisconsin, Madison, Wis.

Honey a Quick Energy Food In the first annual spring "Marathon in the dusk," staged over the 17.3-mile stretch of state highway from Sheridan to Ranchester on May 21, there were 60 runners at the start. It was announced to the participants that I would furnish honey at the five-mile point. Twenty-two of the sprinters elected to try the experiment, and I handed four-ounce packages of fine Wyoming granulated honey in waxed paper cups to the runners as they passed the five-mile point. Twenty-six crossed the finish tape, 15 of whom were among the 22 to choose honey. The winner didn't use honey, but the next seven men to finish did. The winner's time was 1 hours 59 minutes and 4 seconds; the second man's time was 2 hours 10 seconds, just one minute and six seconds behind. There were three minutes between these runners at the five-mile point, where the second man took honey. The eighth man to finish made it in 2 hours, 31 minutes and 44 seconds. The showing these seven men made would indicate that the experiment was justified and that no doubt honey is justly entitled to its claim of being a quick energy food readily assimilated.—Earl C. Reed, Ranchester, Wyo.

A New Honey Product Honey Bee Whole-Wheat Flakes is a delicious breakfast food made by the Dwarfies Corporation at Council Bluffs, Iowa. While this product is comparatively new, it has been on the market for a sufficient length of time to prove to the makers that it is going to enjoy a big sale. Back of this new honey product is an extensive and intelligent advertising campaign. The newspapers and the radio are the chief means that are being used to advertise Honey Bee. As a special introductory advertising feature, the Dwarfies Corporation give with each package of Honey-Bee, a buzzing-bee nov-

elty. This creates a great deal of interest on the part of the children and has played an important part in getting Honey-Bee Flakes readily established. The greatest benefit that the honey industry will receive will be the splendid free advertising that the Dwarfies Corporation will do for honey. This is going to be a big factor in keeping honey before the public, and spreading the word of its good food and health value. More honey is going to be sold by reason of this advertising. It is going to benefit to some degree every honey producer, large and small. Let every honey producer do his or her part by boosting Honey-Bee Whole-Wheat Flakes and eating it every morning for breakfast.—F. L. Swanson, Council Bluffs, Iowa.

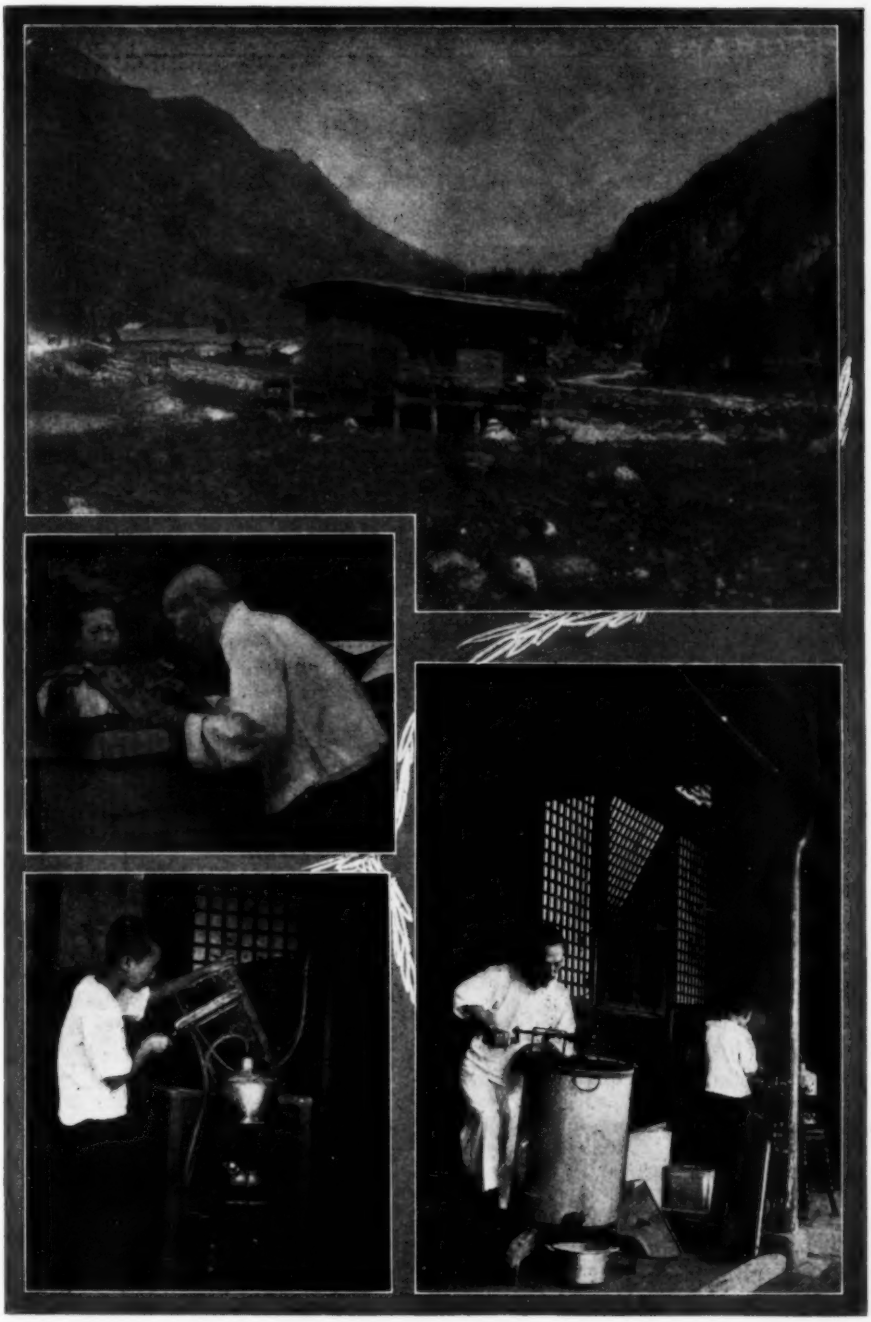
Sky-Scraper Hives Needed I was astonished to learn from the A B C and X Y Z of Bee Culture of five and six story hives, as, according to my experience in Denmark, 1903-06, California, 1906-17, and Brazil, 1919-29, I never needed more than one brood-chamber and three shallow supers. But I now have an apiary in the highlands 800 meters above the sea and a four-hour railroad journey from here where the bees are doing so fine that three supers will not reach at all times. The trouble is that I have them standing in sheds two tiers high with just room for the hive and three shallow supers. I had to rob the strongest of a super not yet ready for extracting and some brood frames, give these to the new colonies or weak ones, and put on two empty supers. —Harald Madsen, Iaragua, Brazil.

Magic Word in Beekeeping A native of this country acquired a few colonies of bees and after a time ascribed his failure to obtain honey to the fact that he did not know the secret word to say to the bees. He bought and searched the Spanish version of the A B C and X Y Z of Bee Culture but to no purpose. In the next edition "abundance" should be inserted as the word of wizardy—abundance of young queens to produce abundance of bees; abundance of stores to feed them; abundance of room to prevent swarming and for evaporating and storing nectar; but above all, abundance of good drones for the multiplication and dissemination of whatever excellencies may exist.—John Brown, Vallarica, Paraguay.

Smoke May Injure Flavor of Honey Every one knows that many foods absorb smoke, especially meat, milk and honey. Therefore, the amount and quality of the smoke from corncobs or decomposing maple wood gives a good flavor to meat, but no one desires a smoke flavor in milk or honey. So it stands us in hand to use a little discrimination as to the quality and amount used inside the hive. In the North, decaying hardwood is about the most available fuel, but here in the South burlap and cotton rags are more at hand, neither of which one uses to smoke meat. Bees have much respect for a little whiff of smoke but I have often thought that they look on a black cloud of smoke as an outrage. Of course, honey will absorb more smoke in the making than after being sealed. Some use cigarette smoke quite freely. I wonder if it would taste as badly as it smells? The first bee-smoker I ever saw was a double funnel contraption with the two big ends fitted together, which my father bought or had made in about the year 1870. There was a screen in one part, and when he blew in one of the holes, tobacco smoke came out of the other.—C. F. Smith, Orlando, Fla.

Songs of Happiness

Home at fall of eve the bees come winging;
Happy is their flight and happier their singing.
As the night draws closer and the light grows faint,
Darker still their air-lines 'cross the skies they paint.
Peace is all about them; a calm and healing peace
Fills the heart and fills the mind and brings the soul release.
Nothing now can trouble, nothing can distress,
Here, where bees are humming songs of happiness.
—Josephine Morse, Coronado, Calif.



BEEKEEPING IN FOREIGN LANDS

Upper—A portable house apiary in Oberdef Pass, Switzerland. Middle—Mr. Wu Hsias Feng and son, Wenchow, China, grafting queen cells. Lower left—Mr. Feng's son operates the uncapping knife. Lower right—Mr. Feng and his son work together in uncapping and extracting.

Talks to Beginners

Geo. S. Demuth

In many localities of the clover region where prospects for a honey crop were very poor a month ago, beekeepers have been made happy by a good honey flow from sweet clover. In many cases where the honey crop from alsike clover and white clover was very short, the bees have stored from sweet clover during the past few weeks 100 pounds or more in extracting combs, or they have filled two or three comb-honey supers. However, these conditions are quite spotted and many beginners in the clover region will probably have but little surplus honey.

Where there is considerable sweet clover, the honey flow may continue during the first half of August and in some cases throughout the month. In localities where buckwheat is grown extensively, especially in portions of New York and Pennsylvania, the main honey flow from that source should begin this month. On swampy land and along the river bottoms, there are sometimes enough fall flowers to furnish nectar for surplus honey, and in some of the northeastern states, goldenrod together with other fall flowers furnishes the main honey crop of the season. So, again this month beekeepers in some localities will experience a dearth of nectar, while in other localities sometimes only a few miles distant, the bees may be storing surplus honey rapidly.

Inducing Bees to Finish Comb Honey

Those who are securing a good crop of honey should watch for the first indication of the end of the honey flow. In the case of sweet clover, the honey flow usually tapers off toward the close, giving ample opportunity to have the sections of comb honey finished. By managing the supers as described in these Talks last month, it is usually possible to have nearly all of the comb-honey sections finished while the honey flow from sweet clover is tapering off toward its close. It often happens that one colony finishes comb honey much better than others. When such a colony is found, it is a good plan to take off all comb-honey supers before the honey flow actually closes and sort out the unfinished ones. These should then be assembled with the ones nearest finished in the middle of the super, and given to the colony or colonies which are doing the best work in finishing. By taking off comb-honey supers before the honey flow actually closes, and giving an upper story of combs if they are at hand, strong colonies will sometimes fill a set of combs which can be profitably left with the bees for their winter and spring stores. At the same time, the number of unfinished sections will be greatly reduced by this procedure.

Extracting Early Gathered Honey Before Fall Flow

While comb-honey supers should be taken off as soon as most of the honey is sealed, extracting supers are often left on much longer. Comb honey is taken off promptly to prevent the cappings being stained with propolis, but such staining does no harm in the case of extracted honey; and leaving it on the hive during hot, dry weather improves the quality of the honey. However, in localities having an early honey flow of white honey and a fall honey flow of darker honey, the early honey should be taken off and extracted before the fall honey flow begins.

After the honey has been extracted from them, the supers of empty combs should be given back to the bees. In localities where there is a fall honey flow, the supers can be distributed so that they will be ready for fall honey. If there is no fall honey flow in the locality, it is a good plan to pile the empty extracting supers on a few colonies so that the bees will better clean up the honey that remains in the combs. It is usually a good plan to leave the extracting combs with the bees until time to prepare the colonies for winter so that the combs will be safe from the wax moths.

Preparing for Next Season

In some respects, August is a critical month in the management of the colonies whether there is a honey flow or not, since the condition of the colonies this month determines, to, a large extent, their condition at the beginning of winter. The foundation for next season's honey crop is, therefore, built within the next several weeks. Much depends upon what happens within the hive during August and September in the North and a little later in the South; and the fate of the colonies during the winter is determined largely before winter begins.

Workers that make up the colonies the

first of August are not the ones that will make up the winter colony. The present workers will all be dead before winter begins and the bees that form the winter cluster are yet to be reared. A good two-frame nucleus can be built up to a normal colony for winter even after the middle of August, provided it has a good queen and plenty of food for rearing brood. On the other hand, if conditions are wrong, colonies that are now extra strong may be so reduced by the middle of October that they are worthless. A colony may greatly reduce its brood-rearing or be without brood entirely in July without jeopardizing its life during winter, but if brood-rearing is greatly reduced or stopped entirely during the latter part of August and September, the colony would go into winter with too few young bees to winter safely. The two things which most frequently prevent a normal amount of brood-rearing during August and September are: a shortage of food, and poor queens or queenlessness.

Even in localities where there is usually a fall honey flow, a considerable amount of honey should be left with the bees in order that they may keep up brood-rearing. The beginner who produces extracted honey is often tempted to extract all the honey from the supers, expecting the bees to have enough in the brood-chamber for their fall and winter needs. Too often this results in near starvation, and, of course, little or no brood-rearing just at the time the young bees for winter should be reared. Even when comb honey is produced, the bees sometimes put so much honey in the supers that there is not enough left in the brood-chamber to insure a normal amount of brood-rearing during late summer and fall. When producing extracted honey, it is well to leave the last super with the bees for their fall, winter, and spring stores. In a locality where there is a fall honey flow, a few combs of honey left in the extracting super may be sufficient, but it is an excellent plan to have either a shallow extracting super or a full-depth super filled with honey to leave with each colony as a reserve supply of food to tide over periods of dearth.

Replacing Inferior Queens

Often colonies go into winter in poor condition because of old or otherwise poor queens. As a rule, queens that are two years old should be replaced with young ones early this month. Colonies that have young queens together with a good supply of honey (preferably an upper story well filled) at this time, are nearly always in good condition for winter two months later. Beginners need not hesitate to replace inferior queens on account of the trouble of finding the old queen and introducing the new one. While it is, of course, more trouble for an inexperienced person to find queens at this season, it can be done; and the experience, together with the improved condition of the colonies makes the replacing of poor queens quite profitable.

Preparations for a Fall Honey Flow

In localities where a fall honey flow is reasonably certain, as in the buckwheat region and regions having an abundance of other fall flowers, it is not necessary to leave so much honey at the close of the early honey flow as in localities which have no fall honey flow. In many localities it is not advisable to try to produce comb honey during a fall honey flow, since a late honey flow is usually slow and the honey is usually dark in color. Under such conditions, it is better to give each colony a super of extracting combs or frames filled with foundation. If these are filled, it will be well to consider this super as a food-chamber, and leave it with the bees for their reserve supply of stores. If more room is needed, a second or third super can be given which, of course, can be taken off and the honey extracted at the end of the fall honey flow.

Storing and Marketing Honey

Finished supers of comb honey after having been sorted should be stored in a warm, dry place since comb honey absorbs moisture from the atmosphere and sometimes sours if stored in a damp place. About ten days after the honey was taken from the hive, it should be examined carefully for indications of the wax moth larvae. If any are present, bits of wax resembling fine sawdust will be found on some of the sections. The larvae of the wax moth can be killed by fumigating the honey. To do this, the supers should be in a tight pile with an empty super on top. If there are six supers in the pile, one ounce of carbon bisulphide (this can be obtained from drug stores) should be placed in a shallow pan in the empty super on top of the pile. Proportionate amounts of carbon bisulphide can be computed for any number of supers. The pile

(Continued on page 534.)

Just News

Editors

The Empire State Honey Producers' Association will hold its summer picnic at the home of Lewis J. Elwood, Fort Plain, N. Y., on August 8. E. R. Root is scheduled to attend the meeting.

The Missouri State Beekeepers' Association will hold its summer meeting in Sedalia at the State Fair on Wednesday and Thursday, August 20 and 21. E. R. Root is on the program for a live-bee demonstration and for talks on honey.

It is reported that the large telephone companies which have heretofore used enormous quantities of beeswax in certain processes have worked out methods by which beeswax is no longer necessary, thus cutting off a large outlet for beeswax.

Ernest A. Southworth, Sioux City, Iowa, who was connected with his father, W. P. Southworth, in extensive honey production, was killed recently in an airplane accident. The young man had taken up flying with the idea of using a plane in their expanding beekeeping enterprise.

The Annual Report of the State Apiarist for Iowa recently issued contains an unusual amount of excellent material on beekeeping topics. In addition to Prof. Paddock's report, there are 25 papers on as many different subjects relating to beekeeping. As usual, this report is a valuable addition to any beekeepers' library.

Beekeepers' Day at the New Hampshire Farm and Home-makers' Week will be on August 14 at Durham. The principal speakers on the program are C. L. Farrar, Massachusetts Agricultural College, G. C. Barton, Apiary Inspector in New Hampshire, and M. C. Pease of Marlboro, N. H. E. J. Rasmussen, Durham, is secretary of this association.

The horticulturists and beekeepers of Illinois are staging a joint tour on August 6, 7 and 8. The tour will start at the 700-colony apiary of Hyde Brothers at New Canton, Illinois, on August 6, and will end at Jerseyville on August 8. This will afford an opportunity for horticulturists to get acquainted with beekeeping and for beekeepers to learn more about horticulture.

E. R. Root is scheduled to attend Beekeepers' Day during the Farm and Home Week at Amherst, Mass., on August 1; a meeting of the Eastern Massachusetts Society of Beekeepers at Melrose, Mass., on August 2; the meeting of the Rhode Island Beekeepers' Association at Park Museum, Roger Williams Park, Providence, R. I., on August 4; and the meeting of the Connecticut Beekeepers' Association at Storrs, Conn., on August 5.

The Wisconsin Beekeepers' Chautauqua and Field Meet will be held at Madison, Wisconsin, August 13 and 14. Among the out-of-state speakers at this meeting are scheduled M. C. Berry, Montgomery, Alabama; Mrs. Mildred G. Day of the Kellogg Company, Battle Creek, Michigan; H. H. Root, Medina, Ohio; E. L. Sechrist, Bee Culture Laboratory, Washington, D. C.; Prof. F. B. Paddock, Iowa State College, Ames, Iowa; O. A. Lende, Mountain States Beekeepers' Association, Minneapolis, Minn.

The American Honey Producer, the official publication of the American Honey Producers' League, is now being published at St. Paul, Minnesota. The new editor is Erwin C. Alfonsus, who succeeds Prof. J. A. Munro in that capacity. Mr. Alfonsus is familiar with both the practical and scientific phases of beekeeping, being the son of the late Alois Alfonsus, formerly professor of beekeeping in the University of Vienna, and for 30 years editor of Der Bienen Vater, one of the leading bee journals published in the German language. A recent issue of the American Honey Producer combines the numbers from February to June inclusive.

Ohio beekeepers are joining with the Michigan beekeepers at the home of Earl Keller, Medina, Michigan, on August 5 for their summer meeting. With both Michigan and Ohio talent, the day's program promises to be exceedingly worthwhile. After the program the Michigan and Ohio beekeepers will leave for East Lansing, the first stop in the Michigan-Ohio beekeepers' tour, August 6, 7 and 8. The tour will extend entirely across the lower peninsula of Michigan and on August 8 into the northern peninsula, thus affording beekeepers the opportunity to visit some of the best honey-producing localities in the state.

Bees, Men and Things

(You may find it here)

"Conditions must improve soon if the bees are to get their winter stores."—M. A. Gill, Utah.

"I work every day in a factory and have bees as a sideline. I sure do enjoy working with them."—T. C. Kirkpatrick, Indiana.

"It is awfully dry here and there is no honey. Unless rain falls soon there will be no crops of any kind."—P. C. Ward, Kentucky.

"We have had recent rains and are having an abundance of clover bloom. The nights are cold. We may get 50 per cent of a crop. Bees begin working on clover at 10 a. m."—N. E. France, Wisconsin.

"I produced 17,060 pounds of honey last year, and my best colony stored 758 pounds. I wonder if any one can beat me on that. I know I can beat it myself and am going to try this year."—Otto Wegner, Minnesota.

"Sourwood honey is bringing 85 cents per pound. I will have a big lot of it for sale. The quality is so fine that it sells like hot cakes. There is no trouble selling it right at home."—M. F. Howard, North Carolina.

"We got some good old orange honey this year. I have only four colonies and keep my queens clipped. I do not take all their honey from them, so that in case of bad weather they will not starve."—W. W. Glasgow, Florida.

"In running for comb honey, when you get ready to super, if you place the combs of sealed brood on the outside you will have more finished sections. This is when you run brood-rearing in two bodies and reduce to one."—L. H. Benninghof, Ohio.

"In most of this territory, the yield has been almost nothing to date. In only three of our fifteen apiaries has any honey been stored to amount to anything, and bees are not in very good condition to gather a crop if there should be a honey flow."—J. A. Green, Colorado.

"There is more interest being manifested this year in the demonstration apiary work than ever before in the history of the work in this state. Mr. A. D. Worthington is unable to attend to all of the demand even with his entire time."—F. B. Paddock, Iowa.

"Our inspection reports show a great reduction in American foul brood in this state. The decrease has been noted from year to year. The inspection of a few thousand colonies this spring shows the greatest decrease of all time in Indiana. It seems almost too good to be true."—C. O. Yost, Indiana.

"Early in the morning at the noon hour, and in the evening when I leave my office, nothing gives me more real rest and satisfaction than to go to my back yard and greet my bees. They know me just as my chickens and cows do. Don't tell me that bees do not know their keepers. If your bees do not know you, it is because you are not keeping them."—J. S. Parsons, Arkansas.

"I believe it would be well if the bee journals would start an undertone of 'stand pat on prices' on honey this year. It seems to me that with most farm products down, it will be hard to maintain last year's price levels if the price cutters get excited. Retail demand for honey in the towns around here has never been so strong as this year and it has held up well in warm weather, so if we all keep steady, all's well."—Merritt B. Cook, Nebraska.

"My honey business is growing so fast that I am quite unable to keep up with it. Through using modern hives and Kellogg advertising material, I am getting afraid of the business, for I have already more orders on hand than I shall be able to produce honey for next season. I am afraid I am in for it now, so I am putting more grease to my old wheels for next year. Last season I averaged 150 sections per colony from my 50 colonies."—T. E. Wise, South Africa.

"I have colonies now working in four comb-honey supers with two nearly capped. Ten-frame hives will give the first finished comb-honey supers, but the Jumbos will have more drawn and finished eventually. Basswood evidently was a great help. Sweet clover is drying up somewhat during these hot days, but a good rain may restore it so that it will continue into August. I expect comb honey prices will be low in Chicago this season and it is up to us to manage to dispose of all of it quickly."—Samuel Cushman, Illinois.

Gleaned by Asking

Geo. S. Demuth

Soy Bean as a Honey Plant

Question.—Do soy beans yield nectar or pollen, or do they produce neither?—Harvey Foote, Illinois.

Answer.—While reports are conflicting regarding the nectar-bearing qualities of the soy bean, it is of doubtful value as a honey plant. It has been reported from some localities that considerable surplus honey was stored from this source. If these reports are correct, they must be the exception. The acreage of soy bean has greatly increased in recent years in many localities, and, if it were a dependable source of nectar, beekeepers certainly would have found it out before this time. It is possible that the surplus honey reported from soy bean was honeydew instead of honey. An article on this subject was published in the October, 1929, issue of Gleanings in Bee Culture, beginning on page 646.

Colony Overpowered by Robbers

Question.—I have a colony of bees that is being slowly but surely destroyed by robbers. The bees do not act as robbers usually do, but go directly into the hive, fighting and stinging as they go. What can I do to remedy the trouble?—J. Albert Large, Virginia.

Answer.—The colony was evidently overpowered in a bad case of robbing. Under such circumstances, colonies sometimes give up and cease to resist robbers. Sometimes contracting the entrance to a very small opening so that only two or three bees can pass at a time will give the colony being robbed an opportunity to again defend itself. In bad cases it is a good plan to cover the entire hive with a large canvas until the robbers cease their activities. Even when this is done, the robbers may again overpower the colony when the canvas is removed. In some bad cases it may be advisable to carry the colony being robbed into a dark cellar, and place an empty hive containing a few empty or nearly empty combs where it formerly stood, then let the robbers think that they have finished the job of carrying away the honey before the colony is put back on its stand. Such cases of robbing emphasize the importance of extreme care to prevent a start of robbing.

Destroying Moths with Carbon Bisulphide

Question.—Please tell me how much carbon bisulphide should be used for each shallow extracting super for destroying moths.—Ralph W. Jessup, Illinois.

Answer.—When shallow extracting supers are piled in a tight pile, one ounce of carbon bisulphide is sufficient to kill the moths in six shallow supers. Therefore, one-sixth of an ounce should be sufficient for each super whatever the number may be. Practically the same amount should be used for comb-honey supers. The fumigation should be done about ten days after the honey has been removed from the hive.

Bee Martins Eat Worker Bees

Question—I have always been of the opinion that bee martins eat worker bees, but a neighbor tells me that they eat drones only. Which is right?—Lacey Compton, Virginia.

Answer.—The bee martins, or king birds, apparently do not discriminate much between workers, queens, and drones. They may eat more drones when drones are plentiful because of their larger size, but they catch and eat many queens and workers as well. They are, therefore, very destructive near a queen-rearing apiary where young queens are destroyed while on their mating flight. The number of worker bees they catch perhaps does not make much difference in a honey-producing apiary, but the queen breeder finds these birds quite a nuisance.

Feeding Extracted Honey to Produce Comb Honey

Question.—Is it possible to feed the bees extracted honey at the close of the honey flow to cause them to keep on producing comb honey till the next honey flow starts?—Albert Kehrt, Central America.

Answer.—Comb honey can be produced by feeding back extracted honey to strong colonies after the honey flow has ceased. However, it is difficult to keep colonies in the proper condition to do this. They sometimes prepare to swarm. At other times they crowd the brood-chamber with honey which later results in the colony becoming too weak to do good work in building comb honey. Those who have been successful in doing this have used the colonies only for three or four weeks or until they are no longer in best condition to store comb honey. While it may be profitable to feed back extracted honey to induce the bees to finish comb honey that is almost finished when the season closes, such feeding would not be profitable in having comb honey built from foundation. There is an enormous waste in the feeding process. Sometimes two pounds of extracted honey are required to make one pound of comb honey. Under more favorable conditions, there is less waste. Even after the honey is finished, it is not

as good in quality as comb honey stored during a honey flow. It usually granulates quite early. Years ago feeding back extracted honey to induce the bees to finish the heaviest of the unfinished sections was practiced to some extent in this country, but this practice has been abandoned almost entirely.

Carbolized Cloths for Driving Bees from Supers

Question.—What strength of carbolic acid solution should be used on cloths to drive the bees out of supers?—Henry H. Elliott, Indiana.

Answer.—The carbolized-cloth method of driving bees out of supers is used to a considerable extent in England. It was used to some extent in this country a number of years ago, but has since been superseded almost wholly by the bee-escape method. The proper strength for the solution depends upon the manner in which it is used. In England it is advised to dilute one ounce of refined carbolic acid in two ounces of water, then sprinkle a little of this strong solution on the cloth. The cloth is then placed in a can with a tight-fitting lid until the solution permeates throughout the cloth when it is ready to be spread over the top of the super from which the bees are to be driven. Another method is to make a 10 per cent solution of refined carbolic acid, then dip the cloth into the solution, wring it almost dry, and place it over the super. There has been some criticism of this method on the ground that the odor from the acid may taint the honey, but it is claimed that this can be avoided by proper use.

Too Much Honey in Food Chambers

Question.—I wintered my bees in two hive bodies, the upper one being full of honey and the lower containing about ten pounds. The bees did not use more than about half of this honey before the food chamber was refilled from fruit bloom and dandelion. How would it do to leave seven frames of honey and three empty combs instead of a full chamber of honey?—Orval R. Bland, Indiana.

Answer.—During ordinary winters and springs, seven frames of honey would usually be enough, but during the past several years, in many localities, the bees have not been able to refill the food chambers from early flowers, so that in many cases a full-depth hive body completely filled with honey has not been too much to keep up brood-rearing during the spring. If it were possible to foretell the character of the following spring, it would be easy enough to determine how much to leave. With the uncertainities of spring weather in many localities, about all that can be done is to leave more than enough unless one cares to resort to spring feeding, which in these days of out-apiaries is an unpleasant task to say the least.

Source of Beeswax

Question.—Where does beeswax come from?—L. R. Lafluer, Louisiana.

Answer.—Beeswax is secreted in the wax glands of worker bees. These glands are located on the ventral portion of the last four visible segments of the abdomen, two on each segment. The wax exudes

Bee with wax scales ready for comb building.

from the pockets on the ventral side of the abdomen. When wax is needed, certain younger bees fill themselves with honey, then hang on one another, forming curtains of bees. In a few hours wax scales appear in the wax pockets which are picked off by worker bees and moulded in place in the comb. Bees with protruding wax scales can usually be seen on combs of honey that are being sealed.

Building Up Nuclei for Winter

Question.—Could one build a colony strong enough to support themselves through winter by placing a three-pound package with a queen together with three or four frames of brood in a hive with frames of foundation not later than the 15th of July?—R. E. Norman, North Carolina.

Answer.—Yes, provided that either enough nectar is available from the fields to carry on brood-rearing and store enough for winter, or the colony is fed liberally. It would not be necessary to put in three pounds of bees with three or four frames of brood. A three-pound package should be able to build up without the brood, or three frames of brood with adhering bees should be enough. A three-frame nucleus can build up to full strength for winter even after the middle of August, provided it is well supplied with stores.

Sell and Buy Here

CLASSIFIED ADS

Only responsible advertisers and honest advertisements will be admitted to these columns. References required from new advertisers not known to us. Rate—7 cents per counted word each insertion. Copy should be in the 15th of month preceding.

HONEY FOR SALE

"We do not guarantee the reliability of honey sellers, although we require strict references from them."—From Our Guarantee and Advertising Conditions.

STURDEVANT clover honey, St. Paul, Nebr.

FOR SALE—Extracted and comb honey. M. W. Cousineau, Moorhead, Minn.

CLOVER HONEY, maple syrup and sorghum. C. J. Morrison, South Bend, Ind.

NEW white clover extracted in 60-lb. cans, 10c. F. J. Smith, Castalia, Ohio.

CLOVER HONEY—Comb and extracted. Dr. E. Kohn & Son, Grover Hill, Ohio.

CHOICE white clover extracted honey, any quantity. Jay Cowing, Jenison, Mich.

CHOICE clover honey, in 5-lb. pails, 60-lb. cans. C. J. Baldridge, Kendaia, N. Y.

60 CANS white and sweet clover honey, $5.00 a can. M. Noack, Frankfort, Ill.

HONEY—New York State extracted white clover. 60-lb. can, $6.00. J. G. Burtis, Marietta, N. Y.

WHITE clover extracted honey. Write for prices and sample. Kalona Honey Co., Kalona, Iowa.

HONEY FOR SALE, any kind, any quantity. The John G. Paton Co., 217 Broadway, New York City.

CHOICE white clover, extracted honey in 60 lb. cans, two to the case. Leland Farnsworth, Davison, Mich.

FOR SALE—Extra choice white clover honey, case or carload. Also amber. David Running, Filion, Mich.

FOR SALE—White clover honey in 60-lb. cans. None finer. Satisfaction guaranteed. J. F. Moore, Tiffin, Ohio.

OHIO'S finest extracted white clover honey. Prices on request. Sample, 15c. Geo. Morrison, Cloverdale, Ohio.

HONEY FOR SALE—All grades, any quantity. H. & S. Honey & Wax Company, Inc., 265 Greenwich St., New York City.

FOR SALE—Three cars white and white amber in 60-lb., 10-lb. and 5-lb. tins. Write for prices. Dadant & Sons, Hamilton, Ill.

FOR SALE—Clover comb and extracted honey. Delivered within 200 miles by truck. Priced right. M. E. Ballard, Roxbury, N. Y.

FOR SALE—A-1 diamond clear clover extracted honey, 1929 crop. Case or car lots, 7½c per pound. New cans and cases. Virgil Weaver, Moville, Iowa.

CHOICE lots white clover, sweet clover, light amber and buckwheat in any amount. State quantity wanted when writing. A. I. Root Co. of Chicago, 224 W. Huron St., Chicago.

EXTRA fancy white comb, $4.00; fancy, $3.75; No. 2 white, amber or buckwheat, $2.75. Packed in carriers of 6 cases. Clover extracted, 8½c, in 3-case lots. C. B. Howard, Geneva, N. Y.

FOR SALE—Comb and extracted honey. H. G. Quirin, Bellevue, Ohio.

WHITE clover comb honey. Charles Guhl, Napoleon, Ohio, Route 7.

FOR SALE—Comb and extracted honey, any quantity. L. Hubbard, Onsted, Mich.

NEW crop clover honey extracted, in new sixties. D. R. Townsend, Northstar, Mich.

1930 CROP, finest white clover honey, comb and extracted. Write Irvin A. Stoller, Latty, Ohio.

FOR SALE—White clover honey, none finer. Write for prices. Fred Leininger & Son, Delphos, O.

OUR new crop of comb and extracted clover honey is ready for sale. H. E. Crowther, Jefferson, Ohio.

FOR SALE—Choice white clover honey in 5, 10 and 60 lb. containers. Harry Gable, Romulus, N. Y.

MICHIGAN'S finest clover honey, new cans, 8½ cents; ten cases, 8 cents. John McColl, Tecumseh, Mich.

HOWDY'S HONEY—New crop of fine Michigan clover honey. Case or carload. Howard Potter, Jr., Ithaca, Mich.

FOR SALE—New crop of raspberry-milkweed clover blend of white honey. Ralph Lenosky, East Jordan, Mich., Rt. 5.

FINE quality fancy and No. 1 white clover comb honey; also extracted. Write for prices. J. I. McGinnity, Edgerton, Wis.

FOR SALE—Finest quality No. 1 and fancy white clover comb honey; extracted in 5s and 60s. Wilbur Green, LaGrange, Ind.

FOR SALE—White clover honey in 60-lb. can. No comb honey. Price on request. Sample, 15c. Jos. H. Hoehn, Ottoville, Ohio.

FOR SALE—Michigan finest white clover honey, in new cans and cases. Sample, 15c. C. E. Glover, Kalamazoo, Mich., R. R. 6.

HEAVY bodied, water-white sweet clover honey, in case or carlots. Sample, 10c. C. S. Engle, 1610 4th Ave. South, Fargo, North Dakota.

OUR fifty-second annual honey crop now ready. A case or a car of Michigan clover extracted honey in new 60's. J. N. Harris, St. Louis, Mich.

NEW CROP SHALLOW FRAME COMB HONEY, also section honey, nice white stock, securely packed, available for shipment now. Colorado Honey Producers' Association, Denver, Colo.

NEW YORK State comb and extracted honey, buckwheat and clover, any quantity, all size packages. Five-pound pails our specialty. A. I. Root Co. of Syracuse, 124 Williams St., Syracuse, N. Y.

FOR SALE—Well ripened white sweet clover honey. Don't let your customers be without honey. The stock we furnish will please them. Write today for prices. Colorado Honey Producers' Association, Denver, Colo.

NEW CROP clover-basswood blend honey in new 60-lb. cans; also buckwheat in kegs and 60-lb. cans. Write for price on case or carlots. E. L. Lane, Trumansburg, N. Y.

18 CASES amber honey at $9.00 per case, 2 60s; 5 barrels at 7½c per pound; some chunk comb in 10-lb. cans. Write for prices. Sample, 15c. R. L. Tucker, Nettleton, Miss.

WE are now shipping new crop clover extracted honey. New cans with 2½-inch screw caps. Of course, it's "Townsend Quality." Say how much you can use and we will be pleased to quote you our best price. E. D. Townsend & Sons. Northstar, Michigan.

COMB and extracted honey, chunk honey, extracted honey in 10 sizes of glass, 2½, 5, 10 and 60-lb. tins. Livest labels in U. S. or plain. Special combination sales case free with $25.00 and $50.00 orders. Write for free samples, prices and illustrated circular showing our packages. Griswold Honey Co., Madison, Ohio, U. S. A.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTE—All our honey-producing friends should take note of the following from the "Guarantee and Advertising Conditions" of Gleanings in Bee Culture: "We will not guarantee any honey buyer's financial responsibility and advise all beekeepers to sell for cash only or on C. O. D. terms except when the buyer has thoroughly established his credit with the seller."

WANTED—Clover honey in any quantity, extracted. Send sample and lowest cash price. F. M. Babcock, Fredonia, N. Y.

CASH for extracted clover honey at Columbus. Give price in first letter. Benninghof Farm, Sta. F., Columbus, Ohio.

WANTED—Carlots of honey. State quantity, shipping point, and price. Mail sample. Hamilton, Wallace & Bryant, Los Angeles, Calif.

BEESWAX WANTED — Will accept shipments of beeswax at regular market price in exchange for bee supplies. The A. I. Root Co., Medina, Ohio.

WANTED—A car or less quantity of white honey, in 60-lb. cans. Mail sample and quote lowest cash price for same. J. S. Bulkley, Birmingham, Mich.

WANTED—Shipments of old combs and cappings for rendering. We pay the highest cash and trade prices, charging but 5c a pound for wax rendered. The Fred W. Muth Co., Pearl and Walnut Sts., Cincinnati, Ohio.

FOR SALE

MAKE queen introduction SURE. One SAFIN cage by mail, 25c; five for $1.00. Allen Latham, Norwichtown, Conn.

ROOT 4-frame reversible hand extractor, 9½" pockets, $25.00; ¾ h. p. gasoline engine on trucks without batteries, $12.00. Clarence Foote, Delanson, New York.

BEST quality bee supplies, attractive prices, prompt shipment. Illustrated catalog upon request. We take beeswax in trade for bee supplies. The Colorado Honey Producers' Assoc., Denver, Colo.

FOR SALE — Fine quality queen-mailing cages; Root quality bee supplies; both comb and extracted honey. Orders filled promptly. Write us or drive over M 53, fifty miles north of Detroit. Hamilton Bee Supply Co., Almont, Mich.

BEE SUPPLY SPECIALTIES

METAL EYELETS in your frames will stop the WIRE SAG which is responsible for most SAGGED COMBS. METAL EYELETS, per 1000, 60c. Handy tool for inserting eyelets, 25c; postage, 3c per 1000. Superior Honey Co., Ogden, Utah.

BEES AND QUEENS FOR SALE

WHOLE colonies of bees, if advertised for sale in these columns, must either be guaranteed free from disease, or, if not so guaranteed, the exact condition of the bees and the conditions of sale must be clearly stated in the advertisement; or, it will be satisfactory if the advertiser will agree to furnish a certificate of health from some authorized bee inspector at time of sale.

QUEENS and package bees. "Yancey Hustlers." Caney Valley Apiaries, Bay City, Tex.

GOLDEN ITALIAN QUEENS. Wirte for 1930 prices. Sam Hinshaw & Son, Randleman, N. C.

REQUEEN with hardy northern lobred Italians, 60c each until Sept. 20. Chas. L. Ruschill, Colfax, Iowa.

SHE-SUITS-ME queens after August 20, until September 20, 60c each, ten or more, 50c each. Allen Latham, Norwichtown, Conn.

FOR SALE—100 colonies three-band Italian bees. Health certificate furnished. Price right. R. L. Smith, 3636 Normandy St., Dallas, Tex.

FOR SALE—Bees and home near Los Angeles. Bees guaranteed free from disease. Frank Loomis, 1010 Golden West Ave., Arcadia, Cal.

FOR SALE—TWIN-DEL QUALITY QUEENS and ROOT QUALITY BEEKEEPERS' SUPPLIES. Prompt service. W. G. Lauver, Middletown, Pa.

QUEEN BUYERS should get our price for delivery after May 15. WE CAN SAVE YOU MONEY. Write us. Crenshaw County Apiaries, Rutledge, Alabama.

PURE ITALIAN BEES—2-lb. pkg. with queen, $2.50; untested queen, 50c; tested queen, $1.00. Inspector's certificate with bees. J. Allen, Catherine, Alabama.

FOR SALE CHEAP—750 colonies bees with modern equipment. Good location. Guaranteed no disease. Law practice demands my time. N. L. Stapleton, Colquitt, Ga.

AUGUST special prices on our golden Italian queens, producing large beautiful bees, solid yellow to tip. Untested select, $1.00 each. Dr. White Bee Company, Sandia, Texas.

LISTEN—To every new customer answering this ad I will sell two of my select untested queens at the price of one. Two for $1.25. Carolina Bee Co., Graham, N. C.

HOLLOPETER'S northern bred, hardy prolific, Italian queens. Untested, one, $1.00; five $4.50; ten, $8.00; 20, $15.00. Safe arrival and satisfaction guaranteed. J. B. Hollopeter, Rockton, Pa.

ALABAMA queens, bright Italians, bred by a vocational breeder 1, 75c; 6, $3.60; 12, $6.60; 100, $50.00. Try them and you will order more. Safe arrival guaranteed. H. B. Talley, R. F. D. No. 4, Greenville, Ala.

I AM offering my Golden Italian queens the balance of the season (untested), any number, 50c each; tested, $1.00 each. I guarantee these queens to be as good as money can buy, or your money back. E. F. Day, Honoraville, Ala.

SELECT three-banded Italian queens. Every queen shipped from our yard is selected, state inspected and guaranteed to give satisfaction. $1.00 each; 6, $5.00; 12, $9.00; tested, $1.50. Pleasant Garden Apiaries, Pleasant Garden, N. C. Carl E. Causey, Manager.

OWING to age and infirmities, must sell my bee business at thousands less than invoice value. Over 54 years a beekeeper. Golden opportunity to right man. Last year's crop, 40,000 lbs. Going strong now. Help buyer to carefully inspect them. Delbert Lhommedieu, Colo, Iowa.

GOLDEN Italian queens producing golden Italian bees, very gentle, good honey gatherers, not bad swarmers. State inspected. Satisfaction guaranteed. Tested, $1.25; select tested, $2.25. Untested, 90c each; 6 for $4.80; 12 or more, 70c each. Select untested, $1.00. D. T. Gaster, Randleman, N. C.

FOR SALE—50 colonies Italian bees, guaranteed free from disease. Three supers filled with honey on each colony go with bees. Excellent location, big honey crop this year. Other work taking my time. Bees located at Wagner, S. D. V. Hlavaty, Custer, S. D.

WRIGHT'S golden queens, producing large, hustling bees, very gentle and beautiful. Select untested, $1.00 each; 5 to 10, 85c each; 10 or more, 70c each. Select tested, $2.50 each. Safe arrival and satisfaction guaranteed. Satisfied customers in thirty-seven states and five provinces in Canada. W. C. Wright, Holt, Mo.

CHOICE bright Italian queens that are a pleasure to work with and be proud to own. Requeen with stock that has been bred and selected in the North the past 27 years for good winterers, hustlers, gentleness, and fine color. One queen, $1.00; dozen, $10.00; breeders, $10 each. Emil W. Gutekunst, Colden, N. Y.

IF YOU want gentle bees, good honey-gatherers and beautiful to look at, my strain of Golden Italians will please you. Prices: Untested, 90c; six, $4.80; 12 to 49, 70c each; 50 or more, 65c each. Tested, $1.25 each. Circular on request. Health certificate, safe arrival and satisfaction. Hazel V. Bonkemeyer, R. 2, Randleman, N. C.

IMPROVE your stock and insure a crop. Besides holding Indiana State comb-honey production records for 10 successive years, these gentle, scientifically, line-bred Italian queens "WIN AGAIN," having the longest tongues in competition with 20 other strains. Untested, 1 to 25, $1.25; 25 to 50, $1.15; 50 to 100, $1.00. Select tested, 1 to 25, $2.50. Breeders, $10.00 each. Honeyville Queen Apiary, Rt. No. 1, Foothill Blvd., east of Monrovia, Calif. Visitors welcome.

ROOT EXTRACTOR COLUMN

(A free advertising service to Root customers who wish to dispose of their present extractors as they are purchasing Root machines of great capacity.)

FOR SALE—Two two-frame reversing extractors with 12 x 16" pockets. D. T. Smith, Box 384, DeSmet, South Dakota.

FOR SALE—Buckeye extractor, 4-frame, 12½" pockets, power driven, in first-class shape, painted white, priced for a quick sale. Benninghof Farm, Sta. F, Columbus, O.

FOR SALE—Root 8-frame multiple reversing power extractor, with 9½-inch pockets, gear ratio 1 to 1 friction, in A-1 shape; $60.00 for quick sale. W. X. Johnston, Port Hope, Mich.

ONE 2-frame back-lot honey extractor. This extractor has extracted less than 500 lbs. and is just like new. Will sell for $18.00, cash with order. H. W. Van Tine, 915 South 11th St., Monmouth, Ill.

MISCELLANEOUS

RABBITS—The beekeepers' sideline, for profit. Pedigreed chinchillas, prize winners. Two junior does and unrelated buck, $10.00. Ohmert Honey Co., Dubuque, Iowa.

BEE HUNTERS—I sell the best outfit for finding bee trees. Will Grover, Bristol, Vt.

WANTED—Partner to go in bee business. Have place and some bees and equipment in Bitter Root Valley, Hamilton, Mont. For further information, write the Gleanings in Bee Culture, Box 65, Medina, Ohio.

CANDIES HOME MADE is one business where "Little Fellow" has advantage over "Big Fellow." Turn your kitchen into small Candy Shop. With sugar 5c pound, and Candies selling 40c to 60c, profits 400 per cent. Many now rich, started with no capital. Trade secrets taught by successful merchant. Profits start at once. Free book explains. Capitol Candy School, Dept. E-2266, Washington, D. C.

TALKS TO BEGINNERS

(Continued from page 527.)

should then be covered to retain the fumes. After five or six hours the pile can be torn down so that the fumes will escape. The honey will then be safe from further trouble from the wax-moth larvae provided it is put in cases or kept in a tight room where moths can not enter.

In preparing comb honey for market, the sections should be carefully taken out of the supers and the propolis scraped from their edges. They should then be placed in shipping cases having a glass front, or wrapped in cellophane wrappers so that they can be displayed on the grocers' shelves without being exposed to dust and flies. Extracted honey when sold locally is usually put up in fruit jars or in five and ten pound friction-top pails.

TOLD BY THE JAY

(Continued from page 512.)

part had just begun to bloat up. We were much grieved, but hungry as we were we both passed up the dessert. My partner set up the lid of the pie as a target for his 30-40 rifle. After a number of shots he reported to me that the test showed the lid to be non-shattering. But we poured out the inside of the pie and those huckleberries sweetened with honey made a most excellent sauce!

Italian Queens

Try my three-banded queens and watch your colonies build up to full strength and store a good crop of honey.

I spent three seasons with The A. I. Root Co.'s queen breeder, Mel Pritchard, learning the business.

Young laying queens, 50c each, any number.

P. J. Norris

MOUNT PLEASANT, ALABAMA

IT'S BETTER PACKED IN TIN

Distributors at 34 points constantly winning new friends with CONTINENTAL HONEY CANS

The Brock Store
Decatur, Ind.

A. G. Woodman Co.
Grand Rapids, Mich.

The Carl F. Buck Co.
Walla Walla, Wash.

J. W. Reid
Uvalde, Tex.

Diamond Match Co.
Chico, California

Quick Seed & Feed Co.
Phoenix, Arizona

Los Angeles Honey Co.
Los Angeles, California

Chas. B. Justice Co.
San Diego, California

Superior Honey Co.
Los Angeles, Calif.
Manhattan, Mont.

Mountain States Honey Prod. Ass'n.
Boise, Idaho

Dadant & Sons
Hamilton, Ill.

The A. L. Boyden Company
Los Angeles, Cal.

The Schultz Honey Co.
Ripon, Wis.

The A. L. Boyden Company of Seattle
Seattle, Washington

North Dakota Bee Supply Co.
Moorhead, Minn.

Colorado Honey Producers Ass'n.
Denver, Colorado

M. H. Hunt & Son
Lansing, Michigan

Sioux Honey Ass'n.
Sioux City, Ia.

A. I. Root Company
St. Paul, Minn.
Chicago, Ill.
Syracuse, N. Y.

Standard Lumber Co.
Winona, Minn.

Magill & Co.
Fargo, N. Dak.

The A. I. Root Company of Texas
San Antonio, Texas

The A. I. Root Company of Iowa
Council Bluffs, Iowa

The A. I. Root Company
Medina, Ohio

Fred W. Muth Co.
Cincinnati, Ohio

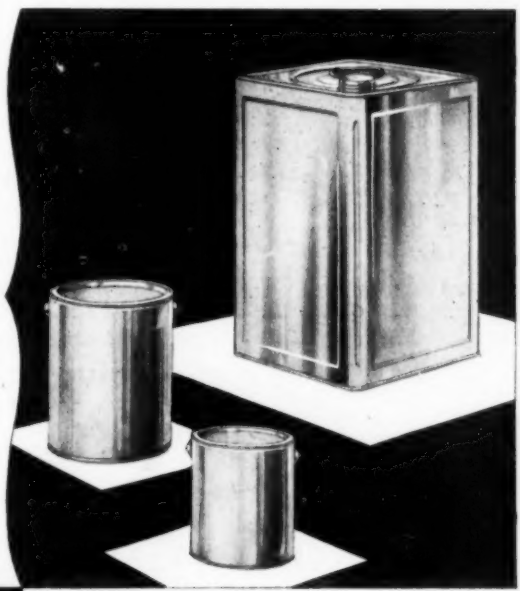
G. B. Lewis Co.
Watertown, Wis.
Albany, N. Y.
Sioux City, Ia.
Lynchburg, Va.
Texarkana, Arkansas

Burrows Hdwe. Co.
Beeville, Tex.

CONTINENTAL Honey Cans had to be good to get where they are. These clean, bright, tight, dependable cans are available from reliable distributors strategically located at thirty-four points.

Not only are you assured of prompt shipments, but of cans that make a strong appeal to your customers, and insure your honey reaching them in excellent condition.

Any of the distributors above will gladly send you samples, prices and full particulars on Continental Honey Cans.



CONTINENTAL CAN CO., INC.
4622 West North Avenue, Chicago, Ill.

LOS ANGELES ST. LOUIS
WHEELING JERSEY CITY
CINCINNATI

1905 — Continental's Silver Anniversary — 1930

"Gray Caucasians"

Caucasians winter on a poor grade of stores and with little winter protection. Caucasians fly freely on days too cold for Italians to leave the hive. Caucasians sting very seldom; also they are very industrious. $1.00 each; 6 for $5.00.

R. W. BALDWIN, Route 4, Greencastle, Ind.

--45c--

THREE-BANDED ITALIAN QUEENS

During August and September we will furnish select guaranteed pure Italian queens for 45c each, any amount.

THE CROWVILLE APIARIES

Route 1. Winnsboro, La.

PATENTS Pat. Counsel of The A. I. Root Co. Practice in Pat. Off. & Court.

CHAS. J. WILLIAMSON

MacLachlan Bldg. Washington, D. C.

Sour Honey

Me and Ab went over to see Mel Pritchard last Sunday about standarizin queens. We found him out in the basswood queen yard tryin to look as if he hadnt been to work any and praps he hadn't, but he had on a vale and the bottom of his pants was tied tight. We says, Mel, old Jack Deyell as is queen and bee man at Roots, aint got nothin to offer practical on standarizin queens. All he does is to ask questions he ought to be answerin such as what is a pure breed Italian queen? If she's got three yellow bands and her daughters have three yellow bands does

(Continued on page 540.)

Quality · Service · Satisfaction

WRITE FOR YOUR COPY OF
OUR 1930 CATALOG TODAY.

❖ ❖ ❖

LEAHY MANUFACTURING CO., Higginsville, Mo.

CONNECTICUT QUEENS

THREE-BANDED ITALIANS THAT PRODUCE HUSTLERS

50c EACH ANY NUMBER 50c EACH

A. E. CRANDALL, BERLIN, CONN.

JENSEN'S

"MAGNOLIA STATE" **50c** QUEENS

$45.00 PER HUNDRED

Search the world over, you will find none better. Judging from reports from some of our customers, we are safe in saying you will be more than pleased.

Old customers practically taking our output. **QUICK SHIPMENTS** and **LIVE ARRIVAL** in good condition, as well as **HIGH QUALITY QUEENS**, sure do bring repeat orders.

CAPACITY, 150 QUEENS DAILY.

To serve you satisfactorily is our highest ambition.

JENSEN'S APIARIES, CRAWFORD, MISS.

TOO LATE FOR CLASSIFICATION

WANTED—A limited amount of section and shallow frame comb honey. Early delivery required. Sioux Honey Association, Sioux City, Iowa.

HONEY PRODUCERS—We are interested in purchasing extracted honey in 60-lb. tins. Advise us of the quality and the quantity that you have and name your lowest prices. C. F. Schobert & Co., 407 Broadway, Kansas City, Mo.

FOR SALE—About 80 colonies of bees in excellent sweet clover location and about 300 supers of drawn combs to run for extracted honey; also 4-frame reversible power Root extractor in excellent condition, guaranteed free from foul brood. E. F. Townsend, 3044 First St., at Biddle and Maple Sts., Wyandotte, Mich.

Knight's Queens

Are Now **50c** Each

FOR IMMEDIATE SHIPMENT.
GOOD AS MONEY CAN BUY.

Guaranteed mated pure. Line-bred three-banded leather-colored Italians. The best honey gatherers and winterers. No disease. No charge for clipping.

Jasper Knight, Hayneville, Ala.

Queens, 45c Ea.

BY RETURN MAIL—ANY NUMBER

QUALITY COMES FIRST—WE HAVE IT.
SERVICE COMES NEXT—WE GIVE IT.
SATISFACTION IS WHAT YOU WANT—We guarantee it. If not, return queen, replace or refund money.

Select untested queens, 50c each, any number. Tested queens, 75c each. Select tested, 90c each. No stamps accepted.

Norman Bros.' Apiaries

T. L. Norman, Mgr. NAFTEL, ALA.

Caucasian Queens

FOR AUGUST DELIVERY

Five reasons why you should use Caucasian queens—

1st. The bees are record honey producers.
2d. They can be handled without smoke or veil.
3d. They provision their brood-chamber well after the main honey flow.
4th. They cap their honey beautifully white.
5th. They are less inclined to rob than some other bees.

Untested, 1 to 5, each, $1.50; 6, $8.00; 12, $15.00; 25 to 49, each, $1.00; 50 and over, 90c each. Tested, one, $3.00. Select tested, $4.50. Safe arrival and satisfaction guaranteed.

Bolling Bee Co., Bolling, Ala.

Wonderful Gentle Bees

Are produced by our queens from Ultra Violet Ray Treated mothers; produced 112 beautiful sections comb honey per colony; much above the balance of this yard. Build up rapidly; have plenty of young bees flying three weeks ahead of all other colonies. Booking orders for June 1. Price, $1.00 each. Pure mating and satisfaction guaranteed. We want you to read our queen circular.

E. F. QUIGLEY APIARIES COMPANY,
Unionville, Missouri

Change Your Spare Hours Into a Fat Weekly Income!

Daniel Hughes
Ohio

DANIEL HUGHES, Butler Co., OHIO, former bank clerk, became a Stark salesman a year ago when failing health forced him to seek outdoor work. Today, he averages over One Thousand Dollars a month sales of Stark Fruit Trees, Flowering Shrubs, Rose Bushes, etc., just in spare time.

Thousands of Men & Women Doing as Well

Send for PROOF of this fact. See how easily YOU can change *your* spare hours into a fine Weekly Income. We furnish BIG NEW SALES-CREATING OUTFIT FREE, pay you Cash Weekly, offer you Costly Prizes, and aid you in selling by tremendous Advertising Campaign reaching practically every farm and small town home in the U. S. *Write today!*

Address Box B-70

STARK BRO'S NURSERIES

at LOUISIANA, MO., 114 *Years*

STARK BRO'S NURSERIES, Box B-70
Louisiana, Mo. G.B.C. 8-30

I would like to become your local salesman and sell ☐ Fruit Trees ☐ Shrubs, etc. (check which you would prefer to sell). Send me details of your Stark Selling Proposition for Men and Women.

Name.....

St. or R. F. D. No.....

P. O.....State.....

THRIFTY QUEENS

45c each

A-No. 1 Italian Queens

By Return Mail

Safe arrival and satisfaction guaranteed in U. S. and Canada. Nine years of careful breeding assure you of good queens. No stamps will be accepted. Untested queens, 45c each; select, 55c. Tested, $1.00; select tested, $1.25.

N. Norman, Ramer, Ala.

Get Running's Queens

And Get honey—They Satisfy.

The kind WE use in our extensive Michigan Apiaries, where we produce honey by the carload.

Choice untested Italian Queens, 65c each; 10 or more, 50c each. Tested, 50c each extra.

All queens sent from Sumterville, Alabama. Telegraph office, Epes, Ala. Address for quick service—

DAVID RUNNING APIARIES

Sumterville, Alabama

JAY SMITH'S QUEENS

For August Requeening Will Pay You Big Dividends

From the many commendable letters and repeat orders, we feel our statement that our bees are far better this year than ever before has been proved. Remember we are just as eager to please you whether your order is for one or one hundred queens.

Jesup, Georgia, June 27, 1930.

Dear Mr. Smith: The four breeding queens arrived in fine shape and are a splendid lot. We released them on hatching brood and one went to laying almost immediately and the others started in a few hours. We are so well pleased with these breeders that we are ordering 100 untested for which find check for $100 enclosed. Yours truly, YORK BEE CO.

Dear Mr. Smith: Your fine yellow queen arrived and was accepted by the black bees, thanks to the Push-in Cage. A week later she was laying in more than three frames. I am not surprised that you have a large demand for your queens. It is a wonderful thing for those who keep only a few colonies of bees to know of a place where they are always sure of courteous attention and such fine stock. Sister———— (Convent in Maryland.)

You will like our queens as thousands of others have. Queens for August, $1.25 each; $100.00 per hundred.

JAY SMITH · Route Three · VINCENNES, IND.

Buy Pure Italian

"Better Bred" Queens

45c Each

Any number. Satisfaction guaranteed. No disease ever known here. Send 40c for sample queen. Reference, Citronelle State Bank.

Calvert Apiaries, Calvert, Ala.

R. G. Holden, Prop.

50c Each Thousands Now Ready to Ship 50c Each

Queens--Queens--Queens

Berry's Reliable Italian Queens

After thirty-six years of Select Breeding we have a strain of Three-banded Italian Bees that are unsurpassed for disease resistance (especially European foul brood), and honey production. Having several branches for the production of honey located in the Northwestern States and Western Canada gives us an excellent opportunity to test out our strain from both honey production as well as climatic standpoints. All queens are of select quality. The culls we destroy. Only those that we would use in our own apiaries do we sell to our customer friends. Wings of queens are clipped free of charge on request.

Safe arrival and satisfaction we guarantee. Also we make prompt shipment or when wanted. We have no disease. Our apiaries were the first in the state to be inspected and were found clean. Directions for introduction and a Health Certificate accompany all shipments. References: The First National Bank, Montgomery.

Price of Our Queens

50c Each — Any Number — 50c Each

M. C. Berry & Co., Box 697, Montgomery, Ala., U. S. A.

50 CENTS EACH FOR ANY NUMBER OF GOOD UNTESTED QUEENS

D. W. HOWELL, SHELLMAN, GEORGIA

E. B. SPITZER, Pres. *E. R. ROOT, Vice Pres.* *H. E. AYLARD, Cashier*

THE HOME OF THE HONEY BEE

YEAR IN — YEAR OUT

you can maintain accounts with this 37-year-old institution without ever taking time to go to the bank.

MAIL YOUR DEPOSITS.

4% BANKING BY MAIL

The SAVINGS DEPOSIT BANK COMPANY MEDINA OHIO

GET OUR PRICES

BEFORE · BUYING · BEE · SUPPLIES

For your convenience we have included a coupon with this ad. Use it or write us a letter.

Our Guarantee

All goods purchased may be returned if unsatisfactory and money cheerfully refunded. No questions asked.

Our Service

While we ship all over the country, we can give special service to those located in the East—New York, Penn., New England, and Atlantic Seaboard states.

W. T. FALCONER MFG. CO.

FALCONER, N. Y.

W. T. Falconer Mfg. Co., Falconer, N. Y.

Gentlemen:

Without obligation on my part, please quote prices. I have.....swarms.

.....Hives .....Sections

.....Supers .....Br. Fdn.

.....Frames .....Super Fdn.

.....Bodies .....

Name .....

Address .....

Town..... State.....

Queens! Queens!

THREE-BANDED ITALIANS

Disease Free. Apiaries under state inspection.

Select untested, one grade only, 1 to 99, 75c each; 100 or more, $70.00 per 100. Select tested, $1.50 each.

Middle Tennessee Apiaries

Leo C. Parks, Mgr.

SPRING HILL, TENNESSEE

QUEENS

Yancey Hustlers

Record Honey-Makers

Untested, 75c each; $8.00 per dozen; $50.00 per hundred.

Tested, $1.25 each; $12.00 per dozen.

Package bees at any time.

Quick service and satisfaction guaranteed.

CANEY VALLEY APIARIES

BAY CITY, TEXAS.

LOOK NOW

Citronelle Bees and Queens

JUST WHAT YOU HAVE BEEN WAITING FOR.

SUMMER PRICES

Effective June 1st

Untested Queens, any quantity, $0.50 each

Tested Queens, any quantity, $1.00 each

2-lb. pkg. with queen, any quantity .....$2.50 each

3-lb. pkg. with queen, any quantity .....$3.00 each

August is requeening time.

Only finest young Bees shipped with 100% Guarantee.

ALABAMA'S LARGEST SHIPPERS

Twenty-four-hour service.

Citronelle Bee Co., Inc.

CITRONELLE, ALA.

QUALITY AND SERVICE.

SOUR HONEY DEPT.

(Continued from page 536.)

that do it? What about her drone sons? Have they all got three yellow bands too? Ain't she got to have pure marked sons? And don't that go back to her father? And so he goes ravin on about what's a pure breed queen or not.

Then we says, Mel, tell us just what you think. Well, says he, look a here, and he opens up a nucly matin box and shows

(Continued on page 541.)

Queens Balance of Season 50c ea.

You will get by your swarming trouble next spring if you requeen with our stock. They are bright three-banded; and a money-back guarantee is on every one. Shipping by return mail.

TAYLOR APIARIES, LUVERNE, ALABAMA.

LEININGER'S STRAIN OF ITALIAN QUEENS

Selected untested guaranteed purely mated, 70c each, any number.

Fred Leininger & Son

DELPHOS, OHIO

BEES

PILE UP EXTRA SUPERS OF HONEY

That's why they are guaranteed to please.

50c Each

is our price on young **THRIFTY** queens for the remainder of the season. We ship only the finest of queens and guarantee them to please.

We can make immediate delivery on large or small orders. Wire or write us today.

Ask for free booklet.

W. J. FOREHAND & SONS

FORT DEPOSIT, ALA.

SINCE 1892

SOUR HONEY DEPT.

(Continued from page 540.)

a virgin queen that is almost black and says her mother is a pure Italian just over from Italy only six weeks ago and if it wasnt for the mother comin from Italy he would pinch that black daughter as most any one would call her a hybred and no good. Again says Mel, how you goin to standardize and what for? Some wants a yellow five band, some wants three band, some wants leather color, some wants a bunty queen, some wants a rat-tail queen. So there you are and

CONTAINERS

10-lb. pails, 50 to carton, per 100	$9.25
5-lb. pails, 50 to carton, per 100	6.25
2—60-lb. cans in wood case	1.00
1-lb. round glass jar, 2 doz to case	1.00
12 cases	11.40

For larger lots write for prices.

JOHN HARNACK & SON, McGregor, Ia.

Queens, 40c

Beginning June first until October will sell queens at following prices: One queen, 50c; six, $2.80; dozen, $5.40. In lots of fifty, 40c each. Requeen with the best and forget the rest. Three-band Italians only. No disease.

C. G. ELLISON, BELTON, SOUTH CAROLINA

Mott's Northern-Bred Italian Queens

Non-swarmers. Five prime swarms the last three seasons from 200 colonies. Bred 350 feet of postoffice. Free descriptive list with testimonials. Why buy hybrids? We guarantee all queens to be select, purely mated, or a free queen given.

April, May: 1, $1.25; 12, $12.50. June: 1, $1.00; 6, $5.75; 12, $11.50; 50, $45.00; 100, $85.00. Select tested, $2.00. Virgins, 50c.

Twenty-five years a specialty. No disease, safe delivery and satisfaction guaranteed.

E. E. Mott & Son, Glenwood, Mich.

The Genuine Three-band Leather Colored Italian Queens

Gentle, prolific, hardy, large, beautiful, and extra good honey gatherers. Surely you will not be disappointed if you try some of these queens, 50c each; $45.00 per 100.

D. C. JACKSON, RT. 1, MOULTRIE, GA.

Marugg's German "Dangel-edge" Scythe

Exclusively made and imported by us since 1873. Are praised by Poultrymen, Apiarists, Nurserymen, Farmers and Caretakers of Lawns in every state. Catalog free. Address

The Marugg Co., Dept. B, Tracy City, Tenn.

1/3 OFF

FOR 60 DAYS

- - on all - -

Letter Heads
Envelopes
Bill Heads

Send for our Beekeepers' Stationery Catalog and cut prices.

The A. I. Root Company, Medina, Ohio

ACHORD QUEENS

Fine three-banded Italians bred for gentleness and honey-producing ability. They will please you.

Now 50c each, any number

Prompt shipments. Safe arrival guaranteed.

W. D. Achord, Fitzpatrick, Alabama

Morrison's Northern Queens

Strictly Three-banded Stock

If you want Italian queens with years of selecting and breeding back of them (19 years of experience) for gentleness, honey gathering, less swarming and capping their honey white, requeen with Morrison's line-bred stock.

UNTESTED	**$0.75 each**
TESTED	**1.25 each**
BREEDERS	**5.00 each**

Pure mating, safe arrival and perfect satisfaction guaranteed.

George Morrison, Cloverdale, Ohio

45c *Three Reasons Why It's Wise to Buy L. L. Forehand's Queens* **45c**

1 They are reared under natural conditions which make that big fine yellow queen you get when you buy from **L. L. FOREHAND.**

2 For over **TWENTY YEARS L. L. FOREHAND** has been breeding queens for the market. Therefore, I know what the trade demands and they get it when they buy from **L. L. FOREHAND.**

3 **L. L. FOREHAND** sells you a **SUPERIOR ITALIAN QUEEN** guaranteed to be as good as can be produced for less money than others ask for ordinary stock.

SAFE DELIVERY AND PERFECT SATISFACTION GUARANTEED OR YOUR MONEY REFUNDED.

Write for quantity discount.

L. L. Forehand Apiaries, Jesup, Georgia

Golden Queens

NOW **50c** EACH

IMMEDIATE SHIPMENT.

BEAUTIFUL, GENTLE AND GOOD HONEY GATHERERS.

We have specially made, patent pending, safe introducing cage, which is also self introducing, in which we guarantee safe introductions even to laying worker colonies. The price for queen in this cage is 50c additional. No disease. Health certificate. No charge for clipping. Pure mating and safe arrival guaranteed.

The Golden Apiaries

John T. Knight, Mgr. LETOHATCHIE, ALA.

MILLER'S STRAIN

Italian Queen Bees for Sale

From my best select breeders; gentle, good honey getters; hardy; winter well; not inclined to swarm; three-banded; thirty-six years' breeding experience. Satisfaction guaranteed.

Queens by return mail—1 untested, $1.00; 6 untested, $6.00. 1 select untested, $1.25; 6 select untested, $7.50.

I. F. MILLER

183 VALLEY. BROOKVILLE, PA.

Harrison's Italian Queens

A quality that makes good; a service that satisfies; and at a price that saves money. What else can one desire? Beautiful, gentle, hardy, vigorous and disease resisting. You get them when you want them, and at a price any one can easily afford to pay.

Select untested, 1 to 24, 50c each; 25 to 49, 47½c each; 50 or more, 45c each. Your money's worth or your money back.

We ship in a six-hole cage. Inspector's certificate attached to every package. Send us your order without further delay.

Harrison Apiaries

ROUTE NO. 1. HONORAVILLE, ALA.

Queens
Queens
Queens

Highest quality Italian stock.

The producing kind.

Prompt service and satisfaction assured.

50c each; $45.00 per 100.

P. M. Williams

Mt. Willing, Alabama

High-Grade Italian Queens

50c Each

RETURN MAIL SERVICE

We have no desire to imitate Gabriel. It is a well-known fact that no breeder has a monopoly on quality. The ever-increasing demand speaks louder of the quality of our queens than would be good taste for us to do so. Our output will be several thousand queens.

Safe arrival and complete satisfaction guaranteed on every queen shipped or money back. We are not satisfied unless you are.

Write or wire your rush orders.

York Bee Company

JESUP, GEORGIA

"Quick Service, No Delay"

My Motto

Three-banded queens only
Select Untested Queens

50c each

Any Number

Pure mating, safe arrival and entire satisfaction guaranteed. Queens clipped if desired.

Hayneville Apiary Co.
W. E. HARRELL, PROP.
Hayneville, Ala.

Queens

For Requeening

Use Forehand

The standard for almost thirty years.

Three-band Italians, 1 to 10, 55c each; 10 to 20, 50c each.

Safe delivery and perfect satisfaction guaranteed.

N. FOREHAND
GONZALEZ · · FLORIDA

Carniolan Queens

If you want extra good honey getters, very gentle, extra good winterers, and builders of very white comb, try our Silver Gray Carniolans bred in the North for over 30 years.

"Received the last queen July 14. Your strain of Carniolans are fine and show good breeding. Queens large and lighter color than other queens I have purchased."—M. H. Fairbanks, Homer, N. Y.

Untested queens, 75c each, $8.50 doz.

A. M. MIDDLETON
Route 2. FORT EDWARD, N. Y.

Italian Queens

BRIGHT THREE-BANDED

In order to gain more package orders for bees we are going to sell queens for August. Three queens for one dollar. These queens are selected untested. Guaranteed to please or replaced free.

THE MANGHAM APIARIES COMPANY
MANGHAM, LA.

Queens, 45c

HIGH GRADE PURE ITALIANS

Satisfied customers my aim.
6 for $2.50; 12 for $5.00; 25 for $10.00.

G. H. MERRILL APIARIES, Greenville, S. C.

Carniolans

are very gentle, very prolific at all times, resist brood diseases well, build very white combs, propolize almost none and are most excellent workers, average of 180 lbs. extracted from producing colonies. **CARNIOLANS ARE LIKE AN HONEST MAN —YOU CAN DEPEND ON THEM.** Jan Strgar strain, the foremost native Carniolan queen breeder. Twenty-fifth year with them; finest Carniolans in the U. S. Have supplied many Agricultural Colleges and Experiment Stations in U. S. and Canada and the Japanese Government with them. Free circular.

Untested queens, one	**$ 1.00**
Untested queens, dozen	**10.00**
Tested queens, each	**2.00**

Caucasians

The hardy, gray strain from the mountainous regions of the Province of Terek, Caucusus. They are unbelievably gentle, prolific, brood compact, **HAVE THE LONGEST TONGUES OF ANY RACE OF BEES**, and show no inclination to swarm under our management. You who have long been wedded to Italians, why not try out a better bee this season? Free circular.

Untested queens, each	**$ 1.25**
Untested queens, dozen	**14.00**
Tested queens, each	**2.25**

Lower prices on both races in more than dozen lots. Write your needs and get prices.

Albert G. Hann
Glen Gardner, New Jersey

WHO IS RIGHT?

MANY BEEKEEPERS say Root Queens are the best they ever saw. A few beekeepers say Root Queens are not altogether satisfactory. For a number of years we have tried out Root Queens alongside of queens from other breeders, in our commercial honey-producing apiaries and we believe there are no better queens produced than Root Queens.

IF YOU are not using our queens we suggest you do so and give them a chance to demonstrate their ability to increase your honey crops. If they please you, tell us. If perchance they do not come up to the standard of quality you can reasonably expect, we want you to write us and we will either replace the queens or return your money. Isn't that fair?

Requeen in August

AUTHORITIES ON BEES say that August is a good month for requeening in this latitude. There are at least two reasons.

1. *There is usually a light honey flow on which helps to insure satisfactory introduction.*
2. *The young queens have a chance to produce populous colonies of young bees in the fall and this helps to insure successful wintering and a good crop of honey the following season.*

Prices in U. S. A. and Canada Only

	1 to 24.	25 to 49.	50 or over.
Untested -	$1.00 ea.	$0.85 ea.	$0.75 ea.
Tested - - -	2.00 ea.	1.85 ea.	
Select Tested	5.00 ea.		

Customers outside U. S. A. and Canada must add 25 cents per queen to above prices to cover extra postage and cost of larger cages.

Note: Our **UNTESTED QUEENS** are young, fertile queens reared this season, that prove to be approximately 99 per cent purely mated.

Our **TESTED QUEENS** are older queens guaranteed purely mated.

Our **SELECT TESTED QUEENS** are choice tested queens that might be used as breeding queens, although they are not tested for breeding purposes.

OUR GUARANTEE ON QUEENS—We guarantee safe arrival of queens sent in mailing cages to customers in the United States and Canada, **but not to island possessions or other foreign countries.** We agree to refund the money or replace the queen if the one first sent arrives dead, provided the beekeeper receiving the dead or unfit queen notifies us and returns her at once and in her own shipping cage, properly marked with name and address of sender. No delay in returning the queen can be permitted. **Guarantee does not cover queens shipped out of U. S. A. and Canada.**

✣

The A. I. Root Company
Medina, Ohio

Clear H Crystal
HONEY JARS
will sell your honey
No panels to catch shadows which darken the color. Beautiful in Clarity and Pattern, and Strength in Construction.
4 SIZES — Individual, Half Pound, One Pound and Two Pound. Accurate Graduation.
WRITE FOR SAMPLES AND PRICES
HAZEL-ATLAS GLASS CO.
WHEELING, W. VA.
WORLD'S LARGEST MANUFACTURERS
GLASS FOOD CONTAINERS

GOOD QUEENS

Any Number

45c each

If you can buy better ones at any price we will buy these back.

250 Queens Per Day

If we can't fill your order promptly we will advise you when we can.

Requeen Now

Now is the time to requeen with the best Italian queens. You will have less winter loss, better colonies next spring, and a bigger honey crop in 1931 when we hope the price of honey will be better.

Queens cheaper than you can rear them.

We are here to furnish you the best for the least.

The Stover Apiaries

Tibbee Station, Mississippi

Telegraph Office, Mayhew, Miss.

Electrify Your Honey Selling

Combination Electric Honey Display Case No. 3C.

and so---

Double

Treble

Quadruple

Those honey sales of yours. You can do it by using our Combination Electric Honey Display Case.

LOWER PRICES—BETTER CASES—DELIVERED FREE IN U. S.

Clean, sanitary, instant service, fully and beautifully displays your honey, both comb and jars.

People demand to see fully what they buy nowadays and are suspicious of covered packages that only partly show contents.

Up-to-date merchants now demand special cases for everything.

You will find no let-up in the sale of your honey when you use our cases, for they deliver the goods.

Thousands of our cases are now doing business throughout the United States, Canada and England.

SPECIAL PRICES

Will deliver you one at cost to use at your state or county fair.

No. 3C, as shown above, complete with flasher, bulb, 10-foot cord, $7.50. Carries $25.00 to $35.00 worth of honey. No. 2 case, same design but smaller, $5.00. Write for new circular.

All cases now shipped in flat only. No glass. Full directions for setting up. Takes but a few minutes. All you need is a hammer and screwdriver. Cases come in seven parts. Only 8 screws. Costs less than 2c per day to operate electric cases. Glass per case will not cost to exceed 50c to $1.25. Sizes specified with each case. Folding rack and carton carrier.

The Griswold Honey Company

Pioneers, Developers and Manufacturers of World's Best Honey Cases

Madison, Ohio, U. S. A.